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Management of Atrial Fibrillation

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ALTHOUGH atrial arrhythmia may occur in normal hearts, its chief importance is that it frequently complicates all the common forms of serious heart disease, contributing to the severity of that disease. In advanced stages of all types of cardiac failure, it is common; and its control depends, in large part, on dilatation of the heart chambers.

During the past half-dozen years, there has been considerable controversy over the mechanism of the arrhythmia. Current evidence is largely opposed to the theory that it is due to a circus mechanism, in which propagating impulses are supposed to stimulate progressive depolarization in the myocardium along a circular path which often includes the origin of the vena cavae. This older theory has given way somewhat to the opinion that multiple rapid firing foci are the real mechanism, and much experimental work and high speed movies have been produced to show this.[1,2,3] With aconitine stimulation experimentally, the fibrillatory source can even be shown to be a single focus. However, the occurrence of both large and small F waves in the electrocardiogram, as are usually recorded for a patient with atrial fibrillation, suggest multifocal sources.

The principal foci of the arrhythmia are presumed to be represented by the larger F waves, whereas the smaller waves are due to secondary foci which are less important and might not sustain or propagate the arrhythmia in themselves. The firing of these foci of beats proceeds at a rapid rate, upwards of 600 times per minute, a rate most inappropriate for sustained action by the ventricles, at least in humans. Accordingly, there is never any complete transmission of these impulses to the ventricle, and some degree of blockage of the impulses always exists at the atrial-ventricular junction. Whether the circle theory or this rapid tachysystolic source or sources theory explains the genesis of atrial fibrillation, or whether in some circumstances, the circle theory may best explain the arrhythmia, does not at the moment have practical importance in management. Our aim is either to augment nature's blockage of these impulses so that even fewer impulses get through to the ventricle, or to directly compel the atrial musculature to behave itself and revert to a regular sinus rhythm.

It is possible for this arryhthmia to exist in perfectly normal hearts, and we see students in school frequently who have episodes of paroxysmal atrial fibrillation and no other detectable

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heart disease. In these persons the arrhythmia does not cause failure of the heart, but it does put the heart at a functional disadvantage, and the patient ordinarily has palpitation, especially after exertion.

The most typical occurrence of this paroxysmal fibrillation, however, is in the presence of rheumatic heart disease, particularly with mitral valve involvement. In this circumstance, the atria are enlarged, especially the left, and a normal pathway for depolarization might have a more devious route to follow, particularly when we know from commissurotomy auricular biopsies that Aschoff nodules are widely scattered through the muscle. The larger the atria, the more likely there is to be fibrillation.

This arrhythmia also occurs with various kinds of degenerative heart disease, coronary atherosclerosis, and in hypertension. In a study of patients after myocardial infarction,[4] ectopic rhythms occurred in about one out of five of the patients. The most common arrhythmia was premature beats; atrial fibrillation was next, accounting for one-fifth of all the arrhythmias. This arrhythmia also occurs with thyrotoxicosis, but the severity of degenerative heart disease from coronary involvement not the severity of the thyrotoxicosis correlates with the occurrence of fibrillation. Hence, atrial fibrillation does not occur as commonly in severe thyrotoxicosis in young persons as with relatively milder thyrotoxicosis in older persons. The management of fibrillation in these persons must include awareness of at least two disease processes, and in the older person we should always be alert to possible co-existing thyrotoxicosis.

It is conceivable that the presence of this arrhythmia might have certain benefits; for example, the occurrence of subacute bacterial endocarditis, always a hazard with rheumatic fever and rheumatic heart disease, is much less frequent in the patient who has fibrillating auricles than the patient who has a sinus rhythm.[5] Two large series indicate the incidence of fibrillation in subacute bacterial endocarditis is about 2-8 per cent whereas the incidence of fibrillation in non-subacute bacterial endocarditis patients with rheumatic heart disease may be 40-50 per cent. We are not sure of the reason for this, and most of those patients who have the arrhythmia with subacute endocarditis developed the arrhythmia during the course of the disease. This paradox, in which the arrhythmia protects from endocarditis, but occurs more often after the development of endocarditis, is unexplained.

Another possible advantage of atrial fibrillation is that in patients who have rapid rates that are difficult to control, the already existing atrio-ventricular block in all patients with fibrillation makes the ventricular rate easier to control by digitalis, when the continuing rapid heart rate might be injurious. Digitalis does not improve fibrillation; it improves the ventricular response to the fibrillating atria. For example, in mitral stenosis where rapid heart rate is always poorly tolerated, the ventricular rate may be much easier controlled than with sinus mechanism. Accordingly, the presence of atrial fibrillation is not a contraindication to commissurotomy surgery, nor does its presence appreciably increase the hazards of the operation. A similar situation occurs in induced surgical hypothermia. It has been reported that paroxysmal noctural dyspnea, and even angina, may be decreased after development of fibrillation.

On the other hand, there are hazards to the persistence of arrhythmia, the most common of which is pulmonary embolism. In the majority of mitral stenosis cases when embolism occurs, there is atrial fibrillation. Daley[6] has reported that in 167 patients with rheumatic heart disease and emboli, fibrillation was present in 90 per cent. Hall[7] reported that of 257 patients with fibrillation who died, 42 per cent had one embolus or more. A considerable number of the deaths in rheumatic heart disease are due to emboli, as has been reported by various authors. Sudden death may occur in any patient with heart disease, but it is not generally appreciated that from 2½ to 4 per cent of patients with fibrillation do die suddenly, often unexpectedly, many due to emboli.

Aside from the danger of embolism, the functional capacity of the heart is less efficient in the presence of fibrillation. When there is the stress of exercise, for example, there is an inordinate rise in the heart rate. In Figure 1, the irregularity of rate results in irregularity of the brachial arterial pulse wave, whose force is proportional to the preceding diastolic filling period and the volume of blood available for

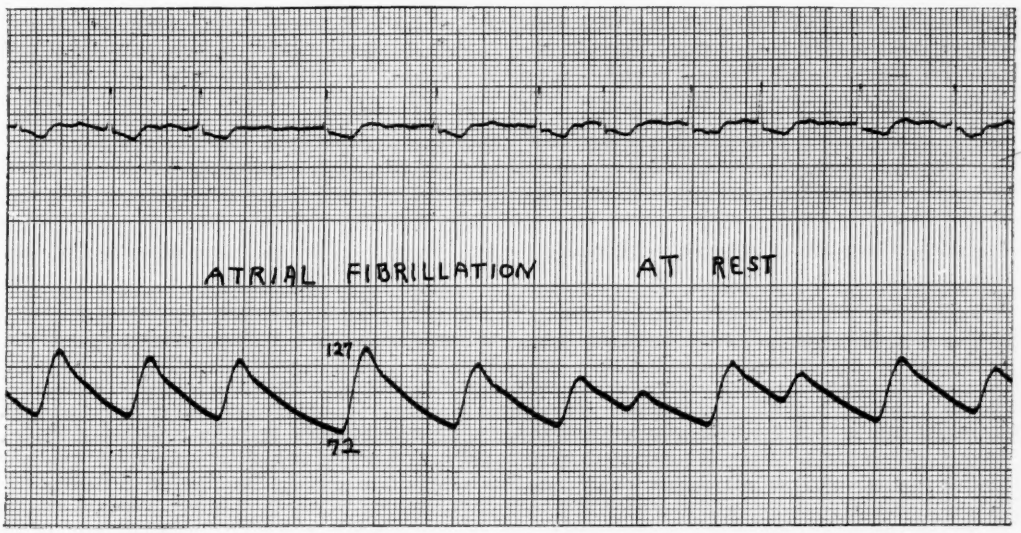

Figure 1. Note irregularity of brachial arterial pulse wave dependent on length of preceding cycle.

ejection. With exercise, as shown in Figure 2, the rate increase is greater than with sinus rhythm and at the expense of the resting period of the heart, an inefficient method sometimes resulting in decreased output. As a consequence of the inefficiency, the overall size of the heart increases, rendering the continuation of the arrhythmia more likely.

When long continued even in an otherwise normal heart, fibrillation may itself cause heart failure. In a study done by Phillips and Levine,[8] a group of patients at an average age of 50 had fibrillation without other evident heart disease; some of the group developed failure after a period of time. This heart failure could be reversed effectively by conversion of the arrythmia. Vital capacity then increased and heart size decreased.

If we accept that this is an undesirable arrhythmia, what sort of patients do we select for the attempt to change the rhythm? It seems reasonable that every patient who develops an

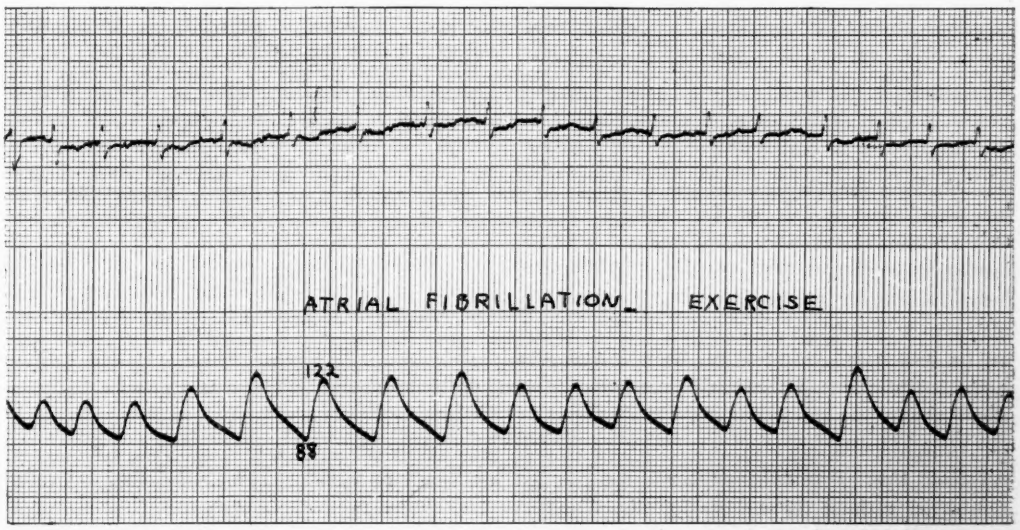

Figure 2. With mild exercise pulse rate doubles, and pulse wave recorded from intra-arterial tracing shows less effective stroke volume.

acute fibrillation should be treated unless spontaneous remission occurs. Also, all patients who have had thyrotoxicosis recently brought under control by surgery or radioiodine therapy. The easiest time to make this attempt at conversion is after euthyroidism is obtained. The patient who has a normal heart and chronic fibrillation should be converted as well as the patient who has minimal cardiac enlargement with considerable palpitation or other symptoms related to this irregular beating.

The next three groups of patients cause some hesitancy on the part of certain physicians to attempt conversion, but I would recommend them for your consideration. Patients who are having emboli should have the attempt, recognizing that an additional embolus may be discharged at the time the conversion is being done. In the long run, however, even with this hazard, the occurrence of serious or even fatal emboli is less after conversion to a sinus rhythm. Then there are those patients with mitral stenosis who by history began to do poorly with the onset of irregularity. A third type of these questionable patients in whom I believe an attempt should be made to revert are those who are incapacitated by heart failure, who have fibrillation, and in whom all attempts with digitalis and diuretics have been relatively unsuccessful. The possibility of achieving a satisfactory conversion is less than in other patients, but the restoration of cardiac competence by a regular rhythm may be so beneficial in the occasional successful patient, it is worthy of the trial and the risk.

A great deal of difference of opinion exists in one other type of patient. This is the patient with a well established atrial fibrillation who has no symptoms and has had no emboli. The only reason for attempting reversion is prophylactic, to avoid eventual cardiac enlargement, heart failure, or emboli. It seems to me each of these cases must be individualized and judged on its own merit. In general, the younger the patient the more enthusiastic one should be about attempting conversion. In elderly patients, the atrial fibrillation may exist with sufficient AV block that the ventricular response is already slow, even without the use of digitalis. Whether or not quinidine should be used in an attempt at reversion in such a patient is not clear cut, but most of us are inclined to leave them alone.

Let us assume that we have a patient who fits one of the categories favorable for conversion. How are we going to proceed with it? In general, it is a wise policy to have patients digitalized before attempting conversion, especially if the ventricular rate is rapid. Although large or toxic amounts of digitalis increase the dangers with quinidine and may prolong fibrillation, if the digitalis is kept in the therapeutic and not in the toxic range, there is no increased hazard to the use of quinidine with it. If the fibrillation is acute, if contraindications to digitalis are present, or if the ventricular rate is slow, there probably is no need for digitalis. The ratio between toxic and therapeutic amounts of digitalis decreases as heart failure proceeds, and excretion of digitalis is reduced in the older patient and in the patient with heart failure, so that a toxic amount of digitalis is more readily achieved.

In the presence of the acute arrhythmia, probably the overall best results are achieved with quinidine, although Pronestyl® (procaine amide) has a similar therapeutic effect. I believe quinidine should be used first, and if unsuccessful, then procaine amide may be tried. Because of similarity of action they should never be used together. If a single dose of quinidine is administered, its peak blood level is achieved in about two hours. The level begins to subside in four hours, is half gone by the end of eight hours, and entirely gone at the end of 24 hours. With quinidine, the fibrillatory rate of the atria slows roughly parallel with the blood level of quinidine. Since the blood level is at its peak in about two hours, it is logical to administer quinidine at two hour intervals. The dosage recommended,[9] therefore, is to begin with 3 gr. (0.2 Gm.) of quinidine orally every two hours and repeat five times during the day, making a total of 10 hours. It is not necessary to give a test dose prior to this regimen.

The patient is allowed to rest at night without additional medication, and it sometimes happens that the reversion is in the middle of the night at a point when the quinidine level is not necessarily at its highest. It is established, however, that the chances of conversion during the night are greater when a previous high level has been achieved during the day. Often sedation at night

helps or, in the elderly, oxygen. If a 3 gr. (0.2 Gm.) dose at two hour intervals for five doses the first day is ineffective, this same routine should be repeated the next day with twice the dose, 6 gr. (0.4 gm.) for five doses. Before each dose is administered, the rate should be checked to see whether or not it has become regular. Again, if unsuccessful, the third day 9 gr. (0.6 Gm.) are administered. It is not wise to go above this level in most cases.

Because there is some accumulation over a period of four or five days, it is well to repeat this same dosage, 9 gr. (0.6 Gm.) every two hours for five doses for that period. It is possible to go higher than this if blood levels can be checked or if no toxicity is manifested. Usually at this dosage, however, some toxic signs begin to appear. True idiosyncracy to quinidine is uncommon; but as the blood level increases, look for signs of ventricular premature beats, vomiting, or diarrhea. Widening of the complexes in the electrocardiogram, unusually low blood pressure, or more rapid ventricular rate. Side effects cause the attempt to be abandoned in about 10 per cent.

If a total daily dosage of 3 or 4 gm. of quinidine in the 10 hour period has not achieved conversion after a period of three days, the likelihood of being able to convert drops from about 80 per cent which it was when you started, to about 30 per cent. Some recent evidence[10] in 215 attempts in 179 patients with established fibrillation showed satisfactory conversion in 80 per cent nonrheumatic heart disease patients and 52 per cent in rheumatic patients at a serum level of 5.7 mg. Are serum levels necessary? I think not, unless dosages above 3-4 Gm. per day are contemplated. They are splendid to have, but not commonly available.

It is possible to use less frequent intervals and to use the drug throughout day and night. We have mentioned that the blood level of quinidine begins to fall off in four hours, and it may be unwise to make the interval any greater than four hours. Every four hours is a satisfactory method also but is extends the dosage often to the evening and sometimes during the night when a physician is not readily at hand to watch the progress of the arryhthmia.

Do these patients retain their reversion after they are once converted? Usually, yes. The maintenance of sinus rhythm is effective in up to 90 per cent of those in whom a satisfactory conversion can be made initially provided quinidine is continued. A mistake is made, I think, in not continuing quinidine once the patient has been treated, particularly since the dosage required to maintain sinus rhythm is less than that required to revert to sinus rhythm. How long the patient should stay on quinidine is questionable. There is no great hazard to continuing the quinidine indefinitely at a rate of 3 gr. (0.2 Gm.), three or four times a day, or for a period at double this dose year in and year out. If fibrillation occurs a second time, the difficulty in reversion may be greater than it was after the first time.

I have mentioned the hazard of emboli, both during chronic or established fibrillation and during the conversion. Is there anything that can be done to prevent this most serious hazard which always leads the physician and patient to believe that when it occurs during his ministrations that the drug may have had something to do with it? If a reliable laboratory is available, the patient co-operative and the physician experienced, then anticoagulants can be given for a two to three week period before reversion is attempted. This ought to be done in those who have had emboli recently, especially when there is a large atrium such as complicates rheumatic mitral valve disease. At present, the use of anticoagulants before all attempts at conversion is not warranted, although again individual judgment should be used.

What about that large group of patients who cannot be reverted or in whom, because of the background disease, we elect not even to make the attempt. For these patients, the proper control of the ventricular rate is most important. One of the digitalis products is certainly indicated, and because a relatively constant blood level of digitalis is important, the longer-acting products are slightly superior to the shorter acting digitalis glycosides. Crude leaf or digitoxin, therefore, seems to have widest use. There is no reason to give quinidine to a patient with atrial fibrillation when he persists in having that arrhythmia, unless an attempt is being made to revert it. It has no cardiotonic action. As most of these patients eventually develop failure, a shorter acting glycoside with a wider therapeutic

to toxic ratio may become more desirable in later stages.

The full therapeutic dosage of digitalis, or its glycoside, is about two-thirds of the amount that produces toxicity. The difference between these becomes less wide as heart disease progresses. At this point, the therapeutic dosage may not have been fully reached, even when toxic levels have been obtained. It is in such a case that a product like gitalin, which is said to have less toxicity at a full therapeutic level, may be indicated. When the comparative maintenance dosage of digitalis crude leaf is 0.1 or 0.2 Gm. per day, and the dosage of digitoxin 1/1000 of this amount at 0.1 mg. or 0.2 mg., the dosage of gitalin is abut 0.5 mg. These average doses may fluctuate upwards or downwards in any given case.

Is there any reason to give prophylactic medication? For example, should the patient with chronic heart disease and large atria be given quinidine prophylactically to prevent the occurrence of eventual fibrillation? This is not common practice but has much to recommend it. Before a patient with fibrillation develops an established arrhythmia, he will often have periods of palpitation and premature beats, which serve as a warning that fibrillation is impending. In such patients, the prophylactic use of quinidine given in the same manner as after reversion of established fibrillation, is indicated. This is often practiced after myocardial infarction, but should be done also in rheumatic disease.

As a rule, quinidine should be given orally. It can be given intramuscularly in the form of a gluconate, sulfate, or lactate but its toxicity is greater when given in parenteral form, and, except with vomiting, there seems to be no reason to give it in this fashion. If arrhythmias threaten, as shown by premature beats, it is sometimes helpful to use intramuscular quinidine during surgery prophylactically; some clinics use it before and during catheterization, but most believe it unnecessary even when the tube is tickling the heart. Only in emergencies should it be given intravenously, and then only when electrocardiograms are taken continuously.

SUMMARY

Sir Thomas Lewis, when he wrote originally about quinidine, said "when in a case of auricular fibrillation, the normal rhythm is restored, the gain to the patient is considerable." It is recommended that we use quinidine much more widely than we are presently using it, in an attempt to revert and keep reverted these special types of patients with established auricular fibrillation.

Quinidine is our most reliable drug in the correction of established fibrillation and should be used, as a rule, after digitalization. Its toxicity usually is mild and relatively unimportant, although occasionally it may be serious and rarely, fatal.

If precautions are taken against emboli, and the electrocardiogram and other signs of toxicity of quinidine are heeded, and the proper dosages are not exceeded, it is a most effective drug, and the benefit to the patient is dramatic. Pronestyl is a drug of second choice principally effective after relatively recent onset of arrhythmia.

Always the risk of the fibrillation must be weighed against the risks and benefits of treatment; if the risk is great, it should be recognized but not feared.

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General Anesthesia in Dentistry

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IN DEALING with patients undergoing dental surgery, some basic problems are immediately faced which are not usually encountered in patients undergoing operations on other parts of the body. For one thing, the dentist will encroach upon the airway of the patient in pursuing his operative procedure and this creates a problem which must be resolved with the greatest safety to the patient and minimal interference with the operation.

In addition, a substantial number of patients who step into the dental chair may be classified as ambulatory and means for the effective and safe management of these patients must be readily available whether the procedure is to be performed in an office or in a hospital. Whereas it is standard procedure to have a physical examination and laboratory studies made for patients undergoing operations other than in dentistry, much neglect is encountered in properly preparing dental patients for office or hospital operative procedures.

The gravity and stature of some operations performed in dentistry have been underemphasized. It is customary for some to regard these procedures and all affiliated services used in conjunction with them as minor. If some are willing to classify an extraction of a molar tooth as a minor procedure, I cannot subscribe to such a classification, nor will I classify the anesthetic procedure in such an operation as minor. To any individual who has spent considerable time in administering general anesthetics, it is apparent that even short operative procedures requiring relatively short anesthesia time can be associated with the greatest danger. Equal vigilance and care must be given to all patients, irrespective of the apparent simplicity of the procedure.

For all patients who are to receive anesthesia to the stage of surgical anesthesia, the following routine preparatory procedures must be carried out, irrespective of the duration and severity of the operative procedure or whether it is to be done in office or hospital. A history must be taken of the status of the cardiac and pulmonary systems, the presence or absence of liver and kidney disease endocrine disturbances such as diabetes, hypothyroidism, or hyperpituitarism, allergies; and diseases of the nervous system such as epilepsy. A history must include information as to the patient's previous experiences with anesthetics of all types and particular heed must be paid to a previous untoward experience with any anesthetic agent. It is prudent to ascertain whether alcohol, tobacco, or habit forming drugs are used. A complete blood count and urinalysis should be obtained and, when indicated, other studies such as chest X-ray and EKG.

This paper is not intended to be an exhaustive discussion of the analgesic stage of anesthesia. Nevertheless, it might be well to point out certain features of analgesia which will enable the anesthetist to use this stage of anesthesia to the extent that it is capable of being utilized.

The first stage of anesthesia is characterized by obtundation of pain in varying degrees, without loss of consciousness, the degree varying with resistance of the individual to depressant drugs, the force of the pain stimulus, and the potency of the anesthetic agent. Resistance to depressant drugs will vary during different periods of one's life cycle and may be altered by other factors even during the same age group and in the same individual under various circumstances such as endocrine function, emotional status, presence or absence of pain or fever, and general well being of the individual. A 21 year old male weighing 160 pounds will have different degrees of resistance to depressant drugs when he has severe pain incident to an infected tooth and no pain in a carious tooth.

The nature of the pain stimulus plays a major role in the degree of obtundation of pain; If it is relatively minor, analgesia will be practically complete but, if it is severe, analgesia may not be complete. Complete analgesia will not be possible in a certain percentage of cases and it will be necessary to deepen the stage of

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anesthesia to the surgical stage to permit completion of surgical intervention.

The potency of various drugs used to produce analgesia varies considerably. It would be unwise therefore, to persist in attempting to achieve a satisfactory analgesic state with a weak general anesthetic agent when a more potent agent would be readily adaptable in the circumstances. Nitrous oxide is a pleasant and useful agent but because of its lack of potency it will fail to produce a satisfactory, physiologic analgesic state in a certain number of patients. In this group, the use of nitrous oxide alone should be abandoned, and a new agent substituted or used as a supplement to effect the desired state of analgesia.

Ethylene is a little more potent than nitrous oxide but it, too, often falls short of producing the desired analgesic state, and supplementation or replacement with another agent will be mandatory. Because of the explosive dangers associated with ethylene, its use as an analgesic agent is fast disappearing.

Trichlorethylene, despite its inherent toxic nature, possesses many desirable features as an analgesic agent and has become increasingly popular in the past few years as an analgesic agent for various dental procedures. Like all other anesthetic agents, it can be deadly, even when administered for what some would consider a minor procedure. There is one instance of cardiac arrest incident to its use as an analgesic agent for the changing of dressings in a burned patient, due to improper administration. This tragedy should stir some out of any false sense of security they may possess that trichlorethylene is perfectly safe when used solely as an analgesic agent. It must be used in an open system without the interposition of an absorber of soda lime life. It is a halogen containing anesthetic and should not be used in conjunction with epinephrine or in the presence of liver or kidney disease or where cardiac disease is associated with disturbances of rhythm. Like the other analgesic agents, it will not be successful in a certain number of patients for analgesic purposes and surgical anesthesia will have to be substituted.

Divinyl oxide has enjoyed popularity among relatively large number of anesthetists for the production of analgesia, especially in children. It is rapid and pleasant in action, but is associated with increase in salivation which can be a drawback in certain procedures.

In all instances where analgesia is to be achieved to the greatest degree, premedication and supplementation plays a large role in achieving the state desired. However, even with the use of these features, it will still not be feasible to utilize analgesia for some procedures and surgical anesthesia will be necessary.

All patients should be individually evaluated as to probable resistance to depressant drugs. Utilizing our powers of observation and reasoning, individual premedication should be administered to fit the particular patient undergoing a particular operation, using a particular anesthetic or group of anesthetic agents, under a particular set of circumstances. All patients should refrain from taking solid or liquid material by mouth after midnight, if the operation is to be performed in the morning, or for at least eight hours for afternoon operations. The heart and lungs should be examined as part of the preoperative physical examination and the pulse, blood pressure, and respiratory rate checked before and at frequent intervals during the operation.

Since the operation will entail encroachment upon the airway, an early decision must be made as to the safest and most efficient way the structure can be protected from obstruction. To this end, one of the greatest devices at our disposal is a good suction machine, which should always be immediately at hand and in working order. Failure to have a suction apparatus on hand is reason for cancellation of the operation. Needless to say, an ample and varied assortment of oropharyngeal and nasopharyngeal airways should be an integral part of the accessory equipment when a patient receives a general anesthetic for any purpose.

Where the operation will not consume much time and the encroachment on the airway will be minimal or of short duration, inhalation or intravenous anesthesia, without the introduction of an endotracheal tube, will be satisfactory. However, whenever the air passages may be seriously obstructed or the operation is to last more than a short period of time, endotracheal anesthesia is the wisest choice. For must purposes, oral endotracheal anesthesia is not quite

satisfactory, and the nasotracheal is preferred. Nasotracheal intubation may be performed blindly or under direct vision and will prove to be technically more difficult in the majority of cases. Spraying the nasal passages, the pharynx, and the larynx with a topical anesthetic will make intubation less tedious. Where nasotracheal intubation has to be performed under direct vision, the use of muscle relaxants will facilitate the insertion of the tube into the larynx with minimal trauma.

There is a wide variety of agents to produce surgical anesthesia. Some cannot be used alone, even when proper preoperative assessment has been made and preanesthetic medication given. In these cases, a combination of several agents will prove most practical. I will restrict my discussion to general anesthetics by the inhalation and intravenous routes. The most commonly employed agents for inhalation anesthesia consist of nitrous oxide, ethylene, cyclopropane, divinyl ether, diethyl ether, and trichlorethylene. Ethyl chloride and chloroform are used by a few anesthetists but these agents have never achieved wide popularity in the United States.

Nitrous oxide and ethylene are weak anesthetic agents and, even with proper premedication, are difficult to administer alone for surgical anesthesia. If they are utilized as the sole anesthetic agent, it is for relatively simple procedures of short duration. In most instances, they are used in conjunction with other agents, such as intravenous barbiturates, intravenous opiates, and inhalation agents of greater potency. Nitrous oxide-oxygen-ether and ethylene-oxygen-ether are examples of the latter combination, while intravenous Pentothal® combined with nitrous oxide-oxygen in a physiologic mixture or intravenous Demerol® combined with nitrous oxide-oxygen in a physiologic mixture are examples in the former categories. Some individuals have utilized nitrous oxide and ethylene in what they consider a successful manner by the introduction of oxygen deprivation, but I am not particularly desirous of duplicating their efforts and of recommending the procedure. Ethylene, either alone or in combination with other agents, should not be used when conditions exist which prevent the explosion hazard from being reduced to a minimum.

Diethyl ether and cyclopropane can be used most satisfactorily in all circumstances except where the explosion hazard has not been reduced to a minimum. Either agent can be used alone or in combination with other inhalation or intravenous agents for producing any degree of surgical anesthesia.

Divinyl oxide can be used alone for procedures requiring not more than 15-20 minutes, but its most successful use is in combination with nitrous oxide, in which cases it is vaporized by a steady stream of nitrous oxide flowing thru a chamber in which drops of vinethene are permitted to fall and become converted to a vapor. It is an explosive agent and all that was said about other explosive agents is applicable to divinyl oxide.

Trichlorethylene is nonexplosive and is pleasant to inhale, but should not be used for the production of surgical anesthesia. It was my good fortune, during World War II, to be stationed in a British hospital, where I had an opportunity to administer a small number of surgical anesthetics with trichlorethylene. Statistics showed that about 80 percent of the anesthetics administered were unsatisfactory because of the complications associated with the use of trichlorethylene for surgical anesthesia. While a variable percentage may be ascribed to my unfamiliarity with the agent to explain the high degree of complications, yet I was assured by those teaching me that even in the most competent hands, the percentage of complications was much higher than when chloroform of diethyl ether was used. I have used trichlorethylene as the sole anesthetic agent so infrequently since that time that I can not speak with any degree of accuracy on its successful use alone as an agent for surgical anesthesia.

The use of intravenous anesthesia, either alone or in combination with inhalation agents, has enjoyed wide popularity in this country for a great many dental procedures. A word of caution is warranted on the use of intravenous anesthetics alone for many dental operations. The rapidity and pleasantness of induction of anesthesia with intravenous barbiturates has caused this route to be widely used by various people with all degrees of training. Some claim outstanding success with minimal complications but others, more experienced and better trained, know the pitfalls of anesthesia and are ever on the alert to diminish untoward reactions and

complications by maintaining certain safeguards.

As with other forms of general anesthesia, a minimal fasting period of eight hours is mandatory and a parasympatholytic drug is essential. If the latter has not been administered when the patient arrived for the operation, atropine or scopolamine should be given intravenously 10 minutes before the administration of the barbiturate. A 2½ per cent solution of thiopental sodium administered by means of a needle and syringe or 0.5 per cent solution administered by intravenous drip are the most popular ways in which thiopental sodium is utilized. As soon as consciousness is lost, oxygen by nasal mask is started.

Because thiopental sodium is not a true analgesic agent and may fail to block afferent nerve impulses, it will be necessary to add nitrous oxide or ethylene to the oxygen except for very short procedures, in which case thiopental sodium can be employed as the sole anesthetic agent.

Whenever the operative procedure is to consume more than a few minutes time or whenever obstruction to the airway is likely to occur, irrespective of the duration of the anesthesia, tracheal intubation is to be considered the safest procedure to follow prior to starting the operation. In most instances, the nasotracheal route will be most desirable. If this is to be accomplished, one way of effecting this is to first spray the nasal passage on the chosen side, as well as the pharynx and larynx with a topical anesthetic.

Once this is performed and anesthesia is carried to the surgical stage, blind nasal intubation can be performed. If this proves tedious, nasal intubation under direct vision, with or without the aid of muscle relaxing drugs, can be achieved in all but a few instances. In the latter contingency, oral intubation will have to be adopted even though it may prove cumbersome for the operating surgeon. Once the tube is inserted, a moistened packing is placed carefully but firmly about the endotracheal tube to prevent foreign substances from entering the tracheobronchial tree by dripping or falling along the sides of the endotracheal tube. Protection can be afforded against this hazard by using an inflated cuffed endotracheal tube when intubation has been performed by the oral route.

Obstruction to respiration is the commonest complication encountered in administering barbiturates intravenously. A rather large percentage of the respiratory obstruction is accounted for by laryngospasm, caused either by direct contact of some foreign substance with the larynx or on a reflex basis. Laryngospasm may be transient or persistent. The former is usually unrecognized by those who have made extravagant claims for the unique safety accompanying intravenous barbiturate anesthesia from the standpoint of low rate of complications. The latter is usually not sufficiently appreciated by members of the same group.

On one occasion the author visited a clinic where a moderately large number of intravenous thiopental sodium anesthetics were administered incident to extraction of one or a few teeth. He was prepared to witness what, in his own practice, was largely an unattainable condition in which practically no complications accompanied this type of anesthesia. In the instance under discussion, approximately 250 cc. of a 2½ per cent solution of thiopental sodium were administered over a period of two minutes. With the patient in a depressed state and with the lower jaw relaxed, the operator (who also administered the anesthetic) inserted a mouth prop and proceeded to extract an upper second left molar tooth. Some difficulty was experienced in extracting the tooth and a small amount of bleeding occurred. The patient began to moan, made swallowing movements, and then suffered a bout of respiratory obstruction due to larynogospasm. The operator was more concerned with the success of removing the patient's tooth than with patient's condition, because no remedical action was instituted until the degree of cyanosis became quite alarming. Larynogospasm eventually was relieved, the tooth removed with the aid of infiltration anesthesia with procaine, and the patient made an apparent complete recovery. He could have died in the dentist's chair.

Other barbiturates are used for intravenous anesthesia in dentistry, including surital® sodium, but the author does not claim wide experience with their use in dentistry. In competent hands, the latter drug has proved as successful as thiopental sodium and has found increasing adherents since its introduction.

In most discussions on anesthesia for dental operations, reference usually is made to anesthetics given in the hospital or, in the case of office practice, to operations of limited duration. In the last part of this paper I should like to pre-

sent for consideration the feasibility of administering general anesthesia for prolonged office procedures. For some reason, it has become increasingly difficult to secure hospital beds for patients requiring dental care, and it often becomes necessary to refer these patients to other dentists who have staff privileges in hospitals. Even where the dentist has staff privileges, a variable period of delay is encountered in securing a bed. For these and other reasons a trend has developed toward doing extensive procedures in the office, under general anesthesia. As these patients are of necessity ambulatory, the problem becomes an imposing one. However, I believe that a solution is available if we "bring the hospital to the patient, if we can't bring the patient to the hospital."

This can only be effected if we create hospital-like facilities in the office. A faint hearted approach is to be discouraged at the outset. Nothing short of duplication of hospital conditions will justify the enterprises. Among the conditions necessary, the following are absolute essentials:

1 A physician anesthesiologist to assume complete responsibility for selection and administration of the anesthetic and post-anesthetic care.
2 A competent dentist and assistant.
3 An anesthetic machine of the finest type available, permitting the administration of the various gaseous and liquid anesthetics in common use.
4 The best available suction machine.
5 A complete line of oro and nasopharyngeal airways.
6 All accessories necessary for the use of endotrachael anesthesia.
7 Drugs, including the barbiturates, opiates, belladonna derivatives, muscle relaxants, analeptics, vasopressors, and curare antagonists.
8 Needles, syringes, and other materials essential for the administration of intravenous anesthesia.
9 A blood pressure apparatus.
10 Charts and records.
11 A postanesthesia observation room as fully equipped as a comparable room in a hospital.

All that was said regarding preoperative history and examination applies just as strongly here. Each patient must be individually assessed and as complete a preoperative workup performed as possible. If any of the items enumerated are lacking, the procedure must be abandoned. There are no shortcuts and there is no possible excuse for proceeding when to do so would endanger the welfare of the patient.

Each patient comes to the office 1½ hours prior to the start of the anesthetic and receives the proper preanesthetic medication. All patients will receive endotracheal anesthesia which provides maximum safety. Where feasible, the nasal passages, the pharynx, and larynx are sprayed with a topical anesthetic before the anesthetic is administered. Where the patient would prove to be unco-operative, a light plane of surgical anesthesia with intravenous thiopental sodium is first established and then the spraying with the topical anesthetic is performed. In a small percentage of patients, usually young children who are unco-operative, induction of anesthesia is performed with divinyl ether and intravenous anesthesia as rapidly as possible. Once topical anesthesia has been effected and the patient is in a light plane of surgical anesthesia, blind nasal intubation is performed. If this is not successful, nasotracheal intubation is done under direct vision, with or without the use of muscle relaxing drugs. Occasionally it might be necessary to perform orotracheal intubation and there should be no hesitancy in doing so even though it may prove cumbersome to the operating surgeon. Once intubation is effected, maintenance of anesthesia is provided with a mixture of nitrus oxide and oxygen, varying from 80 per cent −20 per cent ratio to 50 per cent −50 per cent ratio. As little intravenous anesthesia as possible is administered once the endotracheal tube is inserted.

At the conclusion of the operation, tracheobronchial toilet is performed, extubation carried out, and the patient transferred to the post-anesthesia observation room. In nearly every instance, return of reflexes must have occurred before transfer to the recovery room. This is important because these patients are expected to go home accompanied by another person within an hour or so. If they are to be driven home, a third person must be in the automobile to protect the patient should a sudden stop of the automobile occur. Once home, the patient is

allowed to ingest liquids only and is put to bed so that complete recovery from the anesthetic is attained with minimal danger. Dependent upon the quantity of the barbiturate administered and the rate of detoxification, this may be a period of several hours.

SUMMARY

Anesthetic management for various procedures in dentistry has been presented. Various precautionary measures to make these anesthetic administrations as safe as possible have been described. A method for the safe administration of anesthesia for prolonged procedures in the ambulatory patient has been outlined.

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The Diagnosis and Management of Rheumatic Fever in Children

Joseph R. Christian, M.D., Chicago

DIAGNOSIS

RHEUMATIC fever can be diagnosed on the basis of the history, physical findings, or laboratory studies — either alone or in combination.

HISTORY:

The most significant single factor is the history of recurrences of beta hemolytic streptococcal sore throat. The patient invariably has a typical story of one sore throat after another, with a relatively poor response to medication. Eventually he has an unusally severe attack of pharyngitis or tonsillitis with a prolonged convalescent period during which time he manifests signs and symptoms of more generalized involvement: fatigue, epistaxis, anorexia, abdominal pain, pallor, weight loss, emotional imbalance, and chest pain. These are subtle signs and symptoms which may or may not finally present themselves clinically as the more severe manifestations of arthritis, carditis, chorea, and erythema annulare.

PHYSICAL EXAMINATION:

1. *General Appearance*: The patient often is a fair skinned, delicate featured individual with a pallor all out of proportion to the hemoglobin level. A venous pattern is prominent over the face and trunk. The fingers and toes are spindle-shaped and usually hyperextensible.

2. *Active Carditis*: Tachycardia and a change in the normal rhythm of the cardiac cycle are the most prominent findings. The resting or sleeping pulse commonly exceeds the waking pulse and this single fact can be used to follow the course of cardiac activity. Cardiac enlargement may not manifest itself clinically in the initial attack of rheumatic fever with carditis, although in subsequent attacks it is the rule. Murmurs can be confusing and should not be used as a basis for diagnosing active rheumatic heart disease. However, changing murmurs are significant and should alter prognosis and management of the disease. A friction rub, rumbling heart tones, or fibrillation always indicate a more serious prognosis.

3. *Arthritis*: Hot, swollen, tender, painful joints involving knee, ankle, wrist, elbow, and shoulder are characteristic of rheumatic fever. They are migratory and respond well to salicylates unlike the joint involvement of blood dyscrasia, sickle cell anemia, rheumatoid arthritis, or tuberculous arthritis.

4. *Chorea*: The bizarre involuntary movements of face, trunk, and extremities which

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disappear during the sleeping hours, unaccompanied by laboratory or clinical evidence of an infectious process and associated with extreme emotional imbalance, are pathognomonic of rheumatic chorea. It rarely is associated with cardiac activity or joint involvement and is more common in children over 8 years of age with a previous history of rheumatic fever. Exaggerated reflexes, hung-up patellar reflexes, silver fork deformity of the hands, and inability to control free flow of speech are characteristic findings.

5. *Skin Manifestations*: Erythema annulare is typically a well-demarcated, reddened skin lesion with slightly raised borders and clearer central areas, occurring on abdomen, chest, and back. These lesions are transitory, lasting several minutes to several hours, and frequently are associated with dermatographia and uncontrollable blushing, which are related to emotional swings and environmental temperature change. The prognostic significance of erythema annulare is equivocal.

Subcutaneous nodules are seen less commonly but usually carry a graver prognosis. These small, hard, pea-sized nodules are located over bony prominences, especially of the spine, scalp, and extensor surfaces of the extremities.

LABORATORY STUDIES:

1. *Blood Count*:

A. The hemoglobin usually is between 10-12 grams. However, the clinical impression from skin and mucous membrane color, is that of a much lower level.

B. Rarely is a severe anemia seen except in chronic cases of long duration. The usual range is between 4-4.5 million red blood cells.

C. During the acute phase the total white cell count ranges between 12,000-15,000 with a polymorphonuclear increase. Both of these counts decrease as the disease process subsides.

2. *Erythrocyte Sedimentation Rate*: The sedimentation rate of red blood cells is a nonspecific test for infection, although not specifically, rheumatic fever. In so far as an elevated sedimentation rate usually accompanies activity, the test may be used in evaluating progress except just prior to the stage of congestive failure, when it drops and remains lower or in a normal range. The reason for this has not been satisfactorily explained.

3. *C-Reactive Protein*: In the sera of patients acutely ill with pneumococcal pneumonia, there is a precipitin reaction when the C substance of pneumococci is added. In other acute infectious processes a similar phenomenon occurs due to the presence of an abnormal protein substance which reacts similarly with the pneumococcal C substance. Because of lack of specificity of action, other disease processes must first be ruled out in order to follow the course of activity in rheumatic fever. This test is not influenced by congestive failure but the antirheumatic drugs will affect the results. Upon omission of the drug, however, in the presence of continued activity, the C-reactive protein again reappears.

4. *Antistreptolysin Antibody Titer*: In patients with active rheumatic fever, 95 per cent have a titer of 200 or over; only 42 per cent of patients with inactive rheumatic fever have a titer of 200 or over. In other streptococcal infections, 60 per cent of the patients have a titer over 200. The titer may rise to several thousand but repeated low titers suggests the absence of rheumatic activity or streptococcal infection.

5. *Streptococcal Antihyaluronidase Test*: In streptococcal infections, especially rheumatic fever, a nonspecific heat labile antibody is produced against the hyaluronidase contained in the infecting hemolytic streptococci. The titer is elevated during the acute phase but falls to below normal levels during convalescence.

6. *Electrocardiogram*: Rarely, in the initial attack of rheumatic fever, are any characteristic changes seen on electrocardiographic tracings other than an increased rate. The QT interval may be prolonged in direct proportion to the degree of myocardial damage. Displacement of St-T segments and slight widening of the QRS complexes are seen with myocarditis more commonly then PR prolongation. Stability of the electrocardiogram, despite abnormal changes, is a far better prognostic sign than a changing pattern which might be considered within normal limits.

7. *Cardiac Fluoroscopy*: Cardiac dilatation or hypertrophy may appear in acute rheumatic fever. Early left auricular enlargement can be determined by means of a barium swallow, early in mitral valvulitis. The extreme cardiac enlargement attributed to rheumatic disease is

seen only in subsequent attacks with severe myocardial damage.

8. *Vital Capacity Tests*: One of the first manifestations of myocarditis in rheumatic fever is decreased vital capacity. This test can be done quite simply but because of inexperience or lack of co-operation of the child patient, the results may be equivocal.

MANAGEMENT

Treatment of rheumatic fever should be divided into three phases: prophylactic, active therapy in the acute phase, and treatment of complications.

PROPHYLAXIS:

1. Prevention of hemolytic streptococcal infections may be accomplished by three methods.

A. Sulfadiazine may be given in daily doses of 0.5 gm. in children 8 years of age and 1.0 gm. in older children and adults indefinitely. Reactions of the renal or hematopoietic systems occur during the first six weeks of therapy if they are going to arise.

B. Oral penicillin in doses of 250,000 units daily to all age groups indefinitely. Reactions are minimal, but gastrointestinal complications can occur due to some alteration in the bacterial flora of the intestinal tract.

C. Benzathine penicillin G may be administered intramuscularly in doses of 1,200,000 units to all age groups at intervals of four weeks and continued indefinitely. This is an extremely painful injection and complaints are numerous.

2. Adequate treatment of existing hemolytic streptococcal infections is a must in prevention of rheumatic fever. The dosage schedule recommended by the American Heart Association in a recent communication is:

A. Intramuscular penicillin:
   1. Benzathine penicillin G: One intramuscular injection of 600,000 units to children and 600,000 to 900,000 units to adults.
   2. Procaine penicillin with aluminum monostearate in oil: One intramuscular injection of 300,000 units in children and 600,000 units in adults every third day for three doses.

B. Oral penicillin: 250,000 units three times a day for 10 days, even though the temperature returns to normal and the patient is asymptomatic.

ACTIVE THERAPY IN THE ACUTE PHASE:

Pain and fever are the outstanding symptoms and signs of acute rheumatic fever. In spite of numerous innovations in therapy, there is at present no evidence of uniform response or control of the signs and symptoms of acute rheumatic fever, nor is there any evidence to indicate a drug of choice.

Salicylates*: Aspirin has been the drug of choice for generations. It reduces fever; causes a disappearance of joint pain, tenderness, and swelling; eases precordial, muscle, and abdominal pain; lessens the amount of effusion associated with pericarditis; relieves the involuntary movements of chorea; reduces skin manifestations; and alters the numerous laboratory studies such as the sedimentation rate and C-reactive protein, indicating a subsiding infectious process.

The dosage of aspirin which seems to be effective is:

1. First two days: 60 mgm or 1 gr. per pound.
2. Next five days: 40 mg. or 2/3 gr. per pound.
3. Remainder of six week course of therapy: 30 mg. or ½ gr. per pound.

These doses are divided and given at four hour intervals during the first 48 hours and at six hour intervals thereafter. No sodium bicarbonate is given with aspirin. A blood level between 25-30 mg./100 cc. can be accomplished by this dosage and is effective.

ACTH: ACTH, like aspirin, meets all of the requirements of an antirheumatic drug. However, in severe cases in which the disease process is overwhelming or has been present for a long period of time, the adrenal glands may be in a state of dysfunction and are unresponsive to stimulation.

The dosage schedule for ACTH which has been used at LaRabida Sanitarium over the past five years is:

1. First four days: 120 USP Units
2. Next three days: 100 USP Units
3. Second week: 80 USP Units
4. Third week: 60 USP Units
5. Fourth-fifth week: 40 USP Units
6. Sixth week: 20 USP Units

This dosage is given every six hours during

*Dosages recommended by U.K. and U.S. Joint Committee on Rheumatic Fever.

the entire course of therapy. Along with the administration of ACTH, due to the electrolytic imbalance produced, sodium is restricted to 2 gm. daily and potassium chloride is given orally in doses of 2 gm. daily for children under 60 pounds and 3 gm. for over 60 pounds.

Cortisone: Cortisone acts in a fashion similar to aspirin and ACTH in so far as relief of symptoms and signs. With cortisone, the problem of adrenal dysfunction secondary to an overwhelming or long-continued disease process, is not as prominent.

The total daily dosage for cortisone is as follows:

1. First day:	300 mg.
2. Next four days:	200 mg.
3. For remainder of first 3 wks:	100 mgm
4. Fourth-fifth weeks:	75 mg.
5. Sixth week:	50 mg.

GENERAL CARE:

1. *Bed Rest*: Clinical experience has shown over the years that irrespective of the antirheumatic drug used, a patient who is unable to accomplish emotional as well as physical rest, does not respond. Whether the patient is cared for in the home or at the hospital is of little importance but rest and relaxation must be achieved.

2. *Diet.* An adequate diet rich in proteins and vitamins, especially B, C and D to supplement antirheumatic therapy is needed. Occasionally iron is needed in long-term illnesses with nutritional deficiency states.

3. *Good Nursing Care*: The person delegated with the responsibility of the daily routine of bathing, feeding, administration of drugs and the quieting of fears and anxieties is by far the most important on the team so necessary for adequate care of the patient with rheumatic fever.

4. *Social Service*: With the vast ramifications of the economic, environmental, and emotional factors in the rheumatic fever patient and his family, there is an unusual opportunity and a great need for the social service worker. Her job is to make the family aware of the problems involved and, in co-operation with the family physician, to set up an educational program concerning the facts of the disease and the importance of routine follow-up studies, prophylaxis, and early treatment of each attack.

5. *Occupational Therapy*: To decrease the trauma of long-term hospitalization and convalescence, an occupational therapist or the mother under guidance, can accomplish much. The patient can be made to feel useful and creative abilities can be developed. The emotional stability encouraged by this program is extremely profitable in the overall picture of therapy.

TREATMENT OF COMPLICATIONS:

The major and minor manifestations of rheumatic fever, with the exception of carditis, usually are self-limited and leave no residual. Therefore, the prime concern of the entire therapeutic and prophylactic regimen should be directed at the acute carditis and/or its complications. By far the greatest concern is congestive heart failure. Therapy should include:

1. *Bed Rest*: This is by far the most important single factor in the treatment of heart failure. Emotional and physical activity should be curbed to a level below the cardiac capacity. Bed pans can cause much anxiety and actually produce more activity than bathroom privileges.

2. *Oxygen*: Oxygen is extremely beneficial in patients with acute failure. However, if pulmonary changes are extreme and the medullary centers are narcotized by CO_2 retention, the carotid sinus chemoreceptors control respiration. Due to extreme sensitivity if oxygen is administered, the stimulus of hypoxia is lost, the patient becomes apneic, and oxygen must be stopped immediately.

3. *Sedation*: With the exception of digitalis, morphine and the barbiturates are probably the most significant therapeutic agents in relieving pain and anxiety associated with congestive heart failure.

A. Morphine dosage:
   3 yrs — 1/60 gr. every 4-6 hours for pain or extreme restlessness
   5 yrs — 1/50 gr. every 4-6 hours for pain or extreme restlessness
   8 yrs — 1/32 gr. every 4-6 hours for pain or extreme restlessness
   12 yrs — 1/12 gr. every 4-6 hours for pain or extreme restlessness

B. Phenobarbital dosage:
   3 yrs — 1/8 gr. for extreme irritability, three times daily

5 yrs — ¼ gr. for extreme irritability, three times daily

8 yrs — ½ gr. for extreme irritability, three times daily

4. *Digitalis*: The choice of digitalis is on an individual basis but it is wise to become familiar with one oral preparation for daily maintenance and an intravenous preparation for rapid digitalization. For example:

A. Digitalis leaf: digitalizing dose is 0.01 gm./#, ½ of this dose is given stat and the rest is divided into four equal six hour doses. The average maintenance dose for children is 0.01 gm. daily.

B. Digitoxin: digitalization can be accomplished by giving 0.01 mg./# on the same schedule as described for the leaf. The average maintenance dose for children is 0.01 mg. daily.

5. *Diuretics*: Thiomerin®, ammonium chloride, and Diamox® have been used as adjuncts to therapy in congestive heart failure in children. In patients treated with mercurial diuretics for long periods, a hypochloremic alkalosis may develop, which can be readily corrected by the addition of 2-4 grams of ammonium chloride, given in divided doses orally over a period of several days. Three days of ammonium chloride followed by two days of Thiomerin, given in 1 cc. doses subcutaneously, seems to be effective.

Carbonic anhydrous inhibitors such as Diamox given in daily doses of 250-500 mg. are effective and, when given on alternate days, the diuretic effect is comparable.

SUMMARY

1. The diagnosis and management of rheumatic fever in children has been discussed.

2. The most important single factor in the diagnosis of rheumatic fever from the history is the recurrence of beta hemolytic streptococcal sore throat.

3. Physical examination of the patient with rheumatic fever reveals a fair skinned, delicate featured individual with one or more of the major manifestations of arthritis, carditis, chorea, or the skin manifestations of erythema annulare or erythema nodosum.

4. The majority of laboratory studies used to aid in the diagnosis and management of the patient with rheumatic fever lack specificity of action and should be used only to aid in confirming the clinical diagnosis or impression.

5. Prevention and adequate treatment of the beta hemolytic streptococcal infection are at present the only available means of reducing the incidence of rheumatic fever and rheumatic heart disease.

6. In spite of numerous innovations in therapy, there is no evidence of uniform response or control of the signs and symptoms of acute rheumatic fever nor is there any evidence to indicate a drug of choice.

7. The general care of the patient and the treatment of congestive heart failure as a complication of rheumatic fever are discussed.

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A reason for retirement

There is nothing more pitiful than a physician who continues to practice though he is no longer able to keep abreast of the advances in medicine because of the aging processes and disease. It would be better that he be remembered in medicine for the physician he was, rather than a doddering old man who continually gets into trouble and who is rendering a poor quality of service to his patients. This comes to some earlier than to others, so that age is no criterion. *Clarence K. Elliott, M.D. How to Retire. Nebraska M. J. July 1955.*

Management and Rehabilitation of the Bedridden Patient

David I. Abramson, M.D., Professor of Physical Medicine and Rehabilitation and Head of the Department, Moderator.
Maxwell D. Flank, M.D., Clinical Assistant Professor of Physical Medicine and Rehabilitation.
Mrs. Carol H. Preucil, Associate Professor and Head of the Department of Medical Social Work.
Harold M. Visotsky, M.D., Clinical Instructor in Psychiatry.

Dr. Samter: The subject for today's Seminar has been suggested by our residents who feel the need for orientation in the management of the bedridden patient. It is a pleasure to welcome Dr. Abramson back to the Seminars in his new role as Chairman of the Department of Physical Medicine and Rehabilitation — this seems quite a departure from his last Seminar on "Cold Injury to the Extremities."

Dr. Abramson: Thank you, Dr. Samter. I would like to preface the panel discussion with a few general remarks. As you know, although most hospitals are set up for the care of acute illnesses, more or less, they are plagued by the demands of the long-term patient. The needs of the long-term patient, the theories of his rehabilitation, are well understood. Yet, one wonders whether our social institutions are responding adequately to the needs. The problem is important, since there is little doubt that the physical care and the social well-being of long-term patients require as much attention as the phase of active medical treatment.

Despite intense efforts, most general hospitals find that they treat a fairly large group of patients for a period of thirty days or more, even though the medical condition of many of these individuals may no longer require occupancy of a general hospital bed. In part, this unfortunate situation is due to the fact that alternative facilities, such as nursing or convalescent homes, are frequently unavailable or overcrowded. Even so, however, the awareness of the problem and a concerted effort on the part of physicians, particularly those on the house staff, to utilize all means to rehabilitate a patient and make him as self-sufficient and independent as possible under the circumstances could alleviate much unneccessary suffering and expense. Through neglect of readily available technical knowledge of medical rehabilitation, we are creating disabilities that need not exist.

Allow me to cite an example of mismanagement of rehabilitation of a patient from the files our own Hospital. A woman, 72 years of age, was in the hospital for the treatment of an anemia of unknown origin. A splenectomy was performed and the patient was discharged two weeks later. She was then re-admitted three days afterward because she had developed a sub-diaphragmatic abscess. She had a stormy clinical course and was at complete bed rest for eight weeks. At the end of this period, she was discharged into out-patient care. Without any preliminary attempt at physical training, she was placed in a wheelchair. When she tried to walk, she was unable to stand by herself, became pale and clammy, and "faint" and dyspneic, all signs of severe deconditioning. At this point, and only then, the physical therapist was called in to rehabilitate her. The initial phase took another week, and at the end of this period the patient was barely able to get out of bed by herself and

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walk to the bathroom. She had by no means regained her normal endurance to physical effort. It seems pertinent to emphasize that this patient remained in the hospital for a week longer than would have been necessary if a program of rehabilitation had been set up at the proper time.

Before discussing a specific approach to the problem, it is essential to define the term "bedridden patient." In the past, it has been applied to patients with progressive mechanical difficulty, such as the hemiplegic, the paraplegic, or the patient with multiple sclerosis or rheumatoid arthritis. In a general sense, one can extend and broaden this concept to include all patients who are at bed rest, as for example, a patient with myocardial infarction, congestive heart failure or blood dyscrasias.

It is my impression that residents and interns in the Department of Medicine would like to utilize facilities for rehabilitation of their patients, but they are not certain about the mechanics of the program. Obviously, the decision to initiate rehabilitation is the physician's responsibility. He should decide when the physical state of the patient permits a gradual preparation for active exercise and ambulation. At all times, a contact must be maintained between the physician in charge of the patient and the physiatrist and physical therapist. In addition, the psychiatrist and the medical social worker have an important role in rehabilitation. In other words, there should be an inter-departmental team, working jointly. We have here a group of members of such a team.

First, I should like to ask Dr. Flank, who is a physiatrist, what approach and what techniques he would utilize in the rehabilitation of a bedridden patient, who has been immobilized for four to six weeks.

Dr. Flank: It might be best to use a specific condition, myocardial infarction, to outline the procedures which we use at the U. S. Veterans Hospital, Hines, Illinois. At first, the patient is kept at complete bed rest except for the use of a commode if his condition permits. During this time, he is interviewed by the staff of the Physical Medicine and Rehabilitation Service. During the second week, he is given active exercises, including breathing exercises, flexion and extension of the toes, dorsiflexion and plantar flexion of the ankles, and extension and flexion of the wrists. In the beginning, these exercises are repeated five times, twice a day, but then they are increased to ten times, twice a day. Gradually the severity of the exercises is increased, so that by the third week isometric contractions of the gluteal muscles and active movements of the shoulder and hip are being performed. During the fourth week, active movements of the shoulder, hips and knees are attempted in a sitting position. At the end of the fourth week, the patient walks for one to five minutes, with rest periods. Bathroom privileges are also given to him. In the fifth week, the walking is gradually increased so that by the fourth day of the fifth week, the patient is walking about 300 yards twice a day and is sitting up in a chair in his room for one-half hour twice a day. During the sixth week, he begins stair climbing in preparation for returning to his home.

It is necessary to point out that the rehabilitation program is initiated by the Physical Medicine and Rehabilitation Service only upon request of the resident on the service in charge of the patient. At all times during the program, the patient is under the close observation of the "team". If the physical therapist in the course of the treatment notices abnormal responses, such as a rapid rise in pulse rate, dyspnea on exertion, or the onset of pain in the chest or arm, the exercises are stopped and the resident in cardiology is notified. Upon his decision, it is either discontinued or carried out at a slower pace.

Dr. Ronald Fox, Resident in Medicine: Do you have a program of work classification?

Dr. Flank: As I have mentioned, in the sixth week, the patient is permitted to walk up the stairs. He it then placed on graded activity in the Occupational Therapy Clinic, and an attempt is made there to evaluate him for future work assignments.

Dr. Walter Wood, Resident in Medicine: I am not clear at which point the patient begins to ambulate.

Dr. Flank: We do not ambulate the patients until the fourth week after the acute attack of myocardial infarction. We are well aware that some authors advocate chair therapy, but we are still conservative in our program of the rehabilitation of the cardiac patient.

Mrs. Ann Maly, Physical Therapist, Department of Physical Medicine and Rehabilitation: How does the age of the patient affect the rehabilitation program?

Dr. Flank: The age is not important since the exercises are not strenuous.

Dr. Abramson: The program that Dr. Flank has described, although designed for patients with myocardial infarction, can be utilized with some modifications in the treatment of a patient with congestive heart failure who has undergone a protracted but successful course of treatment. In fact, it can be applied to any type of patient who has been at bed rest for any period of time and who has no mechanical disabilities.

Physical rehabilitation is only one part of the job. Equally important is the treatment of psychic trauma associated with a chronic illness and a long period of bed rest. I should like to ask Dr. Visotsky, a psychiatrist, how he would handle the anxiety that almost inevitably develops in the bedridden patient, and how he would counteract the defenses which are built up in response to this situation. Not infrequently, as you know, a bedridden patient becomes wedded to his state and considerable difficulty may be encountered in breaking up the bonds that exist in his mind.

Dr. Visotsky: Anxiety is a feeling of apprehension and uncertainty. When associated with organic illness, we must determine the scope and dimensions of this anxiety.

First, what does the illness mean to the patient? In our society where the emphasis is placed on the individual's ability to remain independent, the illness may be a serious blow. What does the illness mean in determining the patient's role in the family? How does the illness affect his economic and social positions? Much of this information can be obtained from the patient and from his family.

Knowing the patient's reactions to his illness, one can then deal with underlying fears. Strong social pressures operating to suppress feelings of dependency may be cancelled by giving the patient permission to be dependent in his illness; this will help, for instance, some cardiac patients who have a need to deny the severity or even the existence of the illness.

Patients who, on the other hand, "enjoy" their illness and show much anxiety and little tendency to get well may profit from an interpretation of their needs to remain sick. It is important to be honest and consistent with the patient at all times.

Dr. Abramson: Do you imply that it might be necessary to frighten the patient?

Dr. Visotsky: Emphatically not. I believe that a patient can be informed as to the nature and prognosis of his illness in a non-threatening manner.

Dr. Samter: Do you have a simple method for estimating the patient's reaction to his illness?

Dr. Visotsky: No, there is no simple method. Caution and repeated contact will provide us with adequate answers.

Dr. Abramson: Can probing be dangerous?

Dr. Visotsky: One does not have to probe to elicit information. Relative facts can be obtained through the medium of conversation.

Dr. Buford Hall, Assistant Professor of Medicine: Would you care to make any specific statement on the depression which often follows myocardial infarction?

Dr. Visotsky: A post-myocardial depression, which is frequently seen, is still a depression. It must be handled supportively with much care given to understanding the reason for this depression. There is much to understand in terms of the patient's concept of himself, as for example, how he and his body have been depreciated by the illness. Many patients feel guilty in being ill, running up medical bills, and contributing nothing to the support of their family. The future looks bleak and the role they are to play seems empty. The psychiatrist can handle this most effectively by being able to define clearly the part the patient can take in his family life and in society. It ought to be stated, by the way, that it is just as important to tell a patient what he can do as well as what he cannot do. There is usually too much emphasis on the latter aspect.

Dr. Abramson: The gap between theory and practice in the rehabilitation of the bedridden patient is most intensely felt by the Social Service worker who is unable to find a place for the patient either in his home or in the community. I would like to ask Mrs. Preucil to outline some of her problems.

Mrs. Preucil: The social worker can make a real contribution to the rehabilitation of the bed-

ridden patient. The exact nature of this contribution and its relative significance in the total program vary in individual situations. There are, however, certain functions which are appropriately carried on by the social worker in any case where rehabilitation is needed.

Since certain social factors in the patient's life may be relevant in his participation in, and reaction to, rehabilitation, information on these is often pertinent. Important among these factors are: the cultural background of the patient, his role within the family group, the family's status in the community, and the attitudes of the family and community toward the patient and his handicap. Also, highly significant is the patient's and his family's response to his diagnosis and the limitations which it imposes. The social worker is well equipped to obtain such information and to evaluate it in the light of the particular medical situation. It is his responsibility to share pertinent information and his interpretation of it with the other members of the medical team.

A simple example of the importance of the knowledge of social factors is that of a woman patient for whom every evidence in the clinical picture indicated that an active rehabilitation program was advisable. In this instance, however, the patient came from a culture in which "women are supposed to be taken care of." Until there was recognition and consideration of this philosophy and some attempt to deal with it, the patient, her family, and the community in which she lived could not accept any program which would lead to the patient's becoming an independently functioning individual.

Another function of the social worker is the attempt to understand the patient's concept of himself and to help him to find a positive motivation for rehabilitation. The patient may readily agree to the proposed program and appear willing to carry it through; yet, as he discusses his feelings about his handicap and about the possibilities for rehabilitation with the social worker, his anxieties may come to the surface. He may doubt his adequacy as an individual, his capacity to undergo rehabilitation, his acceptance by his family or peers even after rehabilitation — each of these doubts may make him hesitant of becoming involved in the program which he seemed to accept when it was first presented to him. The nature of this relationship and of the social worker's skill in relaxing the patient so that he will discuss some of his problems might afford opportunities for more intimate contact than those accomplished by other members of the medical team.

Closely related to this function is the one of helping the patient to set reasonable goals for himself within the realities of his social situation. An example of this is the young man with an extreme cardiac disability who could see as the goal of rehabilitation only employment in his previous job or one equally hazardous for him.

Often the social worker is the only one who can confront the medical team with the realities of the social situation and the limitations which these may impose upon the patient's rehabilitation As this information is combined with that of the psychiatrist and the other medical personnel it is important that it be evaluated by the total medical team in order to establish a rehabiliation program which will be realistic for the particular patient and yet be as near the ideal as possible.

If rehabilitation is to be successful, the patient must be included in the planning. All too often planning which has been done *for* a patient does not have the results which seem justified by its apparent soundness. Unfortunately, what the patient thinks is best for him and how he sees that this might be carried out are sometimes not identical with the medical team's ideas in these areas. Assurance that the patient and his family are included in the planning is the responsibility of the social worker as well as of other members of the team.

In order to be useful, the social worker's evaluation of the social situation should be made as soon as possible after the diagnosis has been established. If the planning and program for rehabilitation extend to the patient's life after discharge from the hospital, as they would in most cases, early planning necessitates a knowledge and understanding of the part played by the family and the community in the patient's ability to adjust at home.

Perhaps the function which is most frequently assigned to the social worker is the task of finding the community resources which can meet the patient's needs most effectively at home or in an institution. A corollary of this

is the responsibility of the worker to help the patient and his family use these resources to best advantage. If the only resources which seem available are ones which are unacceptable within the patient's group — such as public assistance for certain individuals or care other than by the family in its own home — the benefits of extensive and expensive hospital care may be jeopardized; for, the patient will not follow through with the program after discharge.

Actually, part of the responsibility of the social worker is the instruction of the patient and his family in the art of coping with and, perhaps, changing any adverse attitudes which may interfere with acceptance of a sound rehabilitation program. In working with other members of the medical team, the social worker may well find it appropriate to suggest changes in the timing of the various steps to be taken in order that the patient can accept the program more easily. Occasionally, the patient will feel free to make a suggestion to the social worker on some aspect of it, whereas he might not feel as free to disagree with one of the members of the team who was more intimately concerned with the supervision of the physical program during his hospitalization. Although such a suggestion may be of little or no value, the worker should share it with the other members of the team in order that every possible way of obtaining the patient's essential participation may be exploited.

In review, the social worker's function might be summarized as: bringing pertinent social data to the medical team and interpreting these in the light of the particular medical and rehabilitation problem; participating with the other members of the medical team in the evaluation of the social factors in the total picture; learning the patient's idea of his potential and helping him to set reasonable goals for himself; and finding the most appropriate community resources and helping the patient to use these to best advantage.

Dr. Visotsky: It would appear at this point that the patient is being over-interviewed. Actually, most of the information should and can be obtained by the physician in his initial contact with the patient. An understanding of the emotional components of a severe disabling illness is important. The internist when aware of these factors can obtain much information and insight into the patient's needs.

Dr. Abramson: Dr. Visotsky's last remarks make one wonder whether the existence of a team, as elaborate as ours, is not an unrealistic approach to the problem of rehabilitation. Although necessary in a university hospital, where a clear separation of each of the phases of rehabilitation is part of the teaching program, its application to smaller hospitals may not be practical, except, perhaps, in a modified form. Many of the techniques which are useful in preventing deconditioning are generally simple and frequently can be performed by the nurse on the ward, provided she has been so instructed. Certainly, such an approach should reduce the incidence of decubitus and contractures of the joints. I am quite certain — and I would like to add this as a final thought — that a good family physician, who has been a friend and advisor of the patient for many years, and is well trained in the principles of both medicine and rehabilitation, combines in his own person many of the advantages and, in fact, avoids some of the problems of communication, of the "team."

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A Program of Respiratory Rehabilitation for Asthma and Emphysema

AUDREY EVANS DERANGO, R.P.T., CHICAGO

FAULTY breathing habits are often a major source of disability in asthmatic and emphysematous patients. The inefficient breathing pattern is not a result of the asthma itself, but rather, develops out of the patient's reaction to his condition. Breathing habits can, therefore, be corrected through re-educating the patient to use a more effective respiratory pattern.

Breathing exercises have been used quite extensively in England for nearly thirty years. It is only in recent years, however, that attention in this country has been directed toward the use of physical exercise for asthma and emphysema.

It is the purpose of this paper to describe the program of therapeutic exercises used at the University of Illinois Research and Educational Hospitals as an adjunct in the treatment of patients with asthma and emphysema. Further studies which attempt to evaluate these techniques are currently in progress. The aims of this exercise program include the following:

1. To decrease the severity of attacks by instructing the patient to relax and focus his attention upon expiration.

2. To decrease dependency upon his nebulizer as the fear of attacks becomes less.

3. To increase the activities the patient can tolerate without shortness of breath.

4. To improve posture through liberating neck and shoulder muscles from the respiratory pattern.

5. To decrease pain and fatigue in accessory respiratory muscles.

6. To decrease the accumulation of secretions, thus reducing the dead space in the lungs and minimizing coughing.

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Physiologic Considerations. — Breathing, usually unconscious, is more fully under voluntary control than most body functions, since most respiratory muscles are striated. Thus breathing exercises are not dissimilar to those directed at other muscle groups. Through suitable muscle re-education, rate, depth and rhythm of respiration can be altered.

In quiet respiration, inspiration is the active phase carried out primarily by the contraction of the diaphragm and to a lesser extent by lateral expansion of the rib cage. Expiration is almost entirely a passive process caused by the elasticity of the lungs and the rise of the diaphragm to its dome-shaped position when relaxed.

During forced inspiration, e.g. after strenuous exercises, the diaphragm is still the most important muscle and accounts for about 60 per cent of inspiration. Contraction of the external intercostal muscles increases the anterior-posterior and lateral diameters of the thorax and provides most of the remaining 40 per cent. Accessory muscles of respiration, the neck and shoulder muscles, are also used to increase further the amount of air inspired by raising and expanding the rib cage, but add only little to the volume inhaled.

While quiet expiration does not require muscular activity, forced expiration uses another group of accessory muscles which compresses the rib cage and abdomen expelling the air similar to the action of bellows. Bending forward will thus aid forced expiration.

Rate, depth and rhythm of respiration are strongly influenced by emotional states. Patients with respiratory impairment are generally tense and anxious, thus further restricting their respiration.

It is characteristic of asthmatics during an attack to neglect the use of the diaphragm and the lateral movements of the lower ribs and, instead, to expend their efforts using accessory

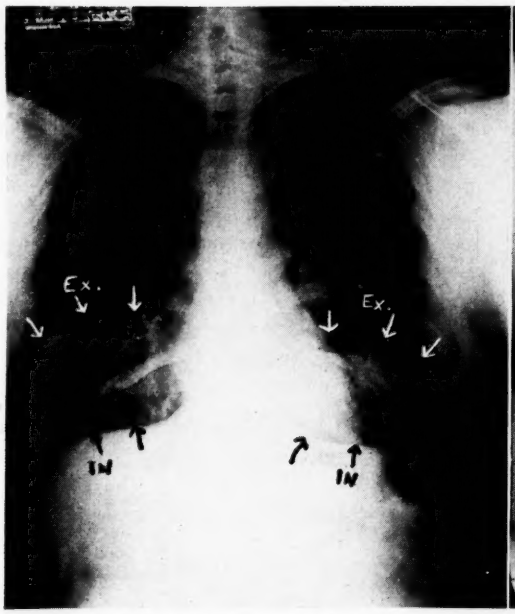

Figure 1. Double exposure x-ray of a normal subject showing diaphagmatic excursion of 8.5 cm. on the left and 7.0 cm. on the right.

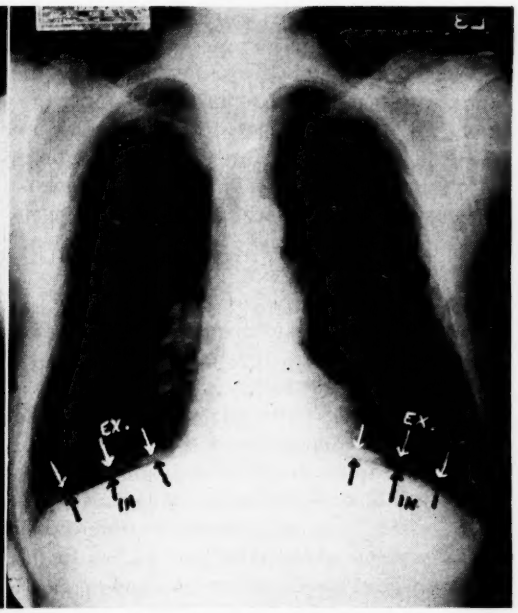

Figure 2. X-ray showing the characteristic loss of diaphragmatic excursion in a 57 year old patient with a 12 year history of bronchial asthma.

muscles of inspiration. Patients when short of breath tend to rush the next inspiration before they have completed the previous expiration. As a result of this premature inspiration, the lungs become more and more enlarged, and excursion becomes limited by the fact that inspiration begins with the already inflated lung. Some patients actually relax the diaphragm so that it rises, instead of descending, during inspiration.

A comparison (Figures 1 and 2) reveals how little the typical chest breather uses his diaphragm even in deep breathing. Using a double exposure technique, X-rays taken at the height of inspiration and at the depth of expiration illustrate the differences in the response of a normal subject with that of a 57 year old patient with a long history of bronchial asthma.

Patients acquire the habit of using accessory muscles of respiration (sternocleidomastoid, external intercostal, pectoralis minor, scaleni, serratus anterior, rhomboid, trapezius) during attacks and then gradually carry over this faulty respiratory pattern for breathing between attacks as well. This erroneous use of accessory muscles which accounts for the typical neck and upper chest breathing pattern in asthma, produces persistent pain and tension in these muscles. Using neck and shoulder muscles for respiration is responsible for the equally common complaint of inability to engage in activities which require elevating the arms such as painting or hanging clothes. The typical posture with hunched shoulders, forward projecting head, and a compensatory "sway back" results from the habitual use of these muscles in breathing.

The respiratory exercises are designed to break the chest breathing habits of the patient and retrain him to use his diaphragm, abdominal muscles and lower rib cage muscles. The success of respiratory re-education is dependent largely on his co-operation and understanding of the program. It is, therefore, imperative that the patient be given a clear and simple explanation of normal and abnormal respiration. He must be made to realize that faulty breathing is not part of his disease, but the result of his reaction to his illness, and that this abnormality can be corrected. In all of the breathing exercises the emphasis is on improving expiration, and the patient must understand why this is necessary. The time spent in so orienting him reduces the period required for teaching him the breathing exercises.

Most individuals who suffer respiratory dis-

tress are anxious and apprehensive and hence are refractory to re-training of the breathing pattern. Consequently relaxation techniques are an integral part of the respiratory training program. It has been our experience that the emphasis of somatic relaxation of muscle groups as described by Jacobson[13] is the most promising approach, particularly in patients whose responses are complicated by severe emotional reaction to the respiratory disorder itself.

Techniques Of Breathing Exercises.

Breathing exercises are divided into elementary and advanced phases. The elementary phase is adaptable to group therapy which facilitates the integration of the patient into the adventure of respiratory breathing. Group therapy, however, should be supplemented by individual instruction to adjust exercises to individual needs. The first periods are devoted to rhythmic diaphragmatic breathing. The patient lies on his back in a quiet room and his head and knees are comfortably supported with pillows. His chest and abdomen are visible.

Exercise 1: *Elementary Diaphragmatic Breathing* (*Figure* 3)

1. The patient is instructed to place one hand on his upper thoracic and neck regions and the other hand on the upper abdomen.

2. The muscles of the chest and neck should remain relaxed throughout the respiratory cycle.

3. The patient inspires with minimum motion of the rib cage, the upper abdomen "swelling" beneath his hand as the diaphragm descends.

4. The upper abdomen should be drawn in as the patient exhales audibly, making an "f" or "s" sound through his teeth.

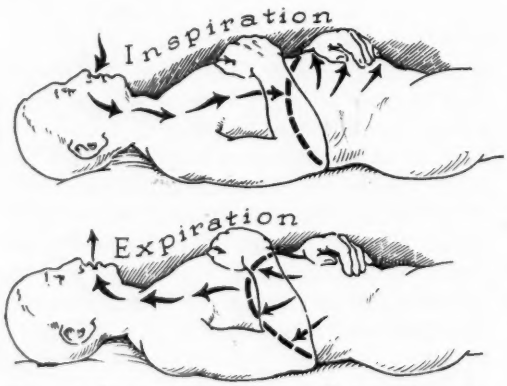

Figure 3. Elementary diaphragmatic breathing exercise.

5. When the patient understands the exercise, he should be allowed to practice unobserved.

6. The patient should now be instructed to increase the period of expiration and this should be timed. He may start with an expiration that lasts five to ten seconds and should be encouraged to double or even triple the expiration time.

7. If it becomes necessary for the patient to take a gasping breath accompanied by a sudden rise of the bony thorax, he has extended his expiration beyond his capacity. Cough and an increase in wheezing may occur during exercises, but should not discourage their continued use.

Exercise 2: *Increasing Lower Rib Cage Mobility Using a Belt.* (*Figure* 4)

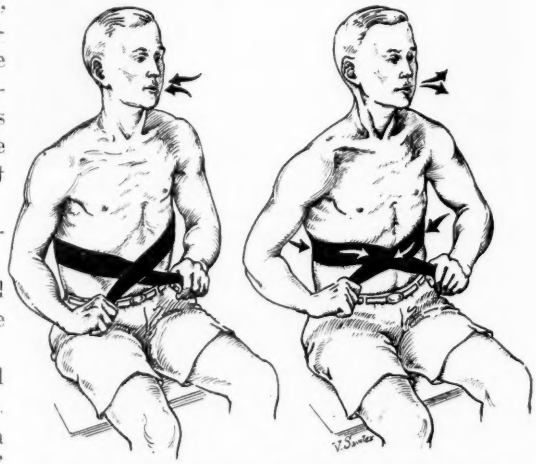

Figure 4. Exercise for increasing lower rib cage mobility using a belt.

1. The patient places a 2-4" belt around the lower part of the rib cage.

2. The belt crosses in front of the patient as he holds an end of it in each hand.

3. The patient is instructed to tighten the belt thus compressing his ribs as he exhales through his mouth.

4. At the end of expiration the patient relaxes the tension in the belt allowing the lower ribs to expand as he inhales.

5. When the patient understands the exercise he should be encouraged to perform it rhythmically 15-18 times a minute. He should rest at intervals to avoid hyperventilation and arm fatigue.

Exercise 3: *Side Bending.*

1. The patient sits on a stool or an armless chair and places his right hand over the side of

the lower left ribs. The left arm is relaxed.

2. The patient slowly bends toward his left side compressing the ribs with his hand as he exhales maximally.

3. The patient relaxes his hand and returns to the upright position as he inhales.

4. After six rhythmic bends to the left the patient repeats the same exercise to the right side.

Exercise 4: *Forward Bending.*

1. The patient sits on a firm stool or chair.

2. The patient relaxes his shoulders, arms, and neck, he bends forward from the waist as he exhales.

3. As the patient returns to the upright position he is instructed to inhale slowly and effortlessly.

4. The patient repeats the exercise six times rhythmically.

Exercise 5 *Arm Elevation*

1. The patient sits holding a barbell or weighted broomstick in his hands.

2. The patient is instructed to raise the barbell as he inhales, thus employing the shoulder muscles and restricting their use as accessories to inspiration.

3. As the patient lowers the barbell he exhales by contracting his abdomen and lower ribs.

4. The weight of the object is increased as the patient improves.

The patient should be instructed to use diaphragmatic breathing consciously during ten minutes of every hour until this pattern becomes automatic. After this, he may continue every morning before arising, every evening before going to sleep, and at other times during the day when respiratory distress is present. It is important that he be encouraged to practice the simple exercises for the rest of his life even during asymptomatic intervals. It has been the experience of several investigators that exercises maintained during periods of freedom from bronchial asthma are most likely to produce permanent improvement in the shape of the chest and the vital capacity.

In order to maintain clinical improvement the patient should advance to the following functional activities:

1. He should attempt chopping and pumping motions with his arms which are synchronized with his diaphragmatic breathing.
2. He should learn to climb stairs at a regular rhythm: two to four with expiration, one to two with inspiration. The instructor should note the number of steps climbed without dyspnea. The record represents a simple and fairly objective measure of progress.
3. He should blow balloons since this provides a good resistive exercise for the advanced patient. The program should then be extended systematically to include the performance of all of the so-called skills of daily living.

Posture Training: Postural training is an important part of the respiratory re-education program. Figure 5 shows the forward projection of the head, protracted shoulders and compensatory lordosis typical of the chest breathers referred for respiratory training classes. The following exercises are those found most effective in improving this abnormal posture:

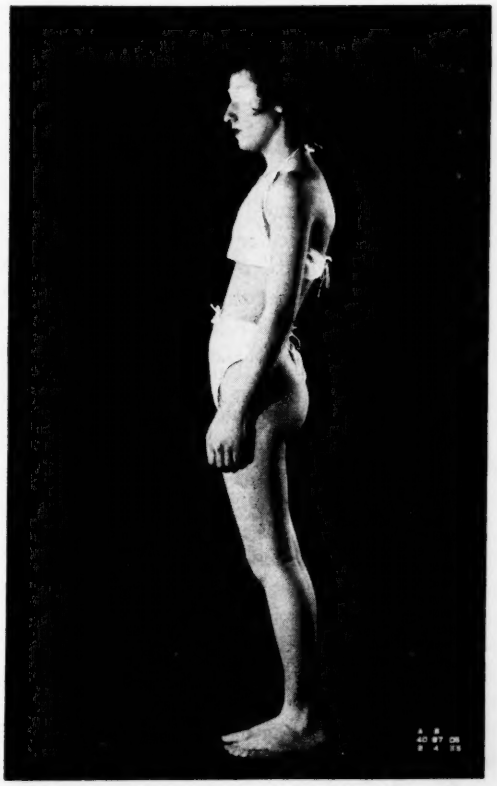

Figure 5. Typical posture of chest breathers showing forward projection of the head, protracted shoulders and compensatory lordosis.

Exercise 1: *Upper Abdominal Strengthening.*

1. The patient rests in supine position on a firm surface with knees somewhat bent.
2. The instructor places his hand beneath the patient's back in the lumbar region.
3. With his arms extended, the patient should slowly raise his trunk ten inches from the supporting surface. He should then slowly return to the supine position. Exercise of this type will increase the strength of the upper abdominal muscles.

Exercise 2: *Lower Abdominal Strengthening.*

1. Patient lies supine on a firm surface.
2. The patient is instructed to flex his knees to his chest with arms extended at his side.
3. The patient attempts to lift his hips off the supporting surface.
4. The patient maintains the knees flexed between hip lifts and repeats the exercise 5-8 times.

Exercise 3: *Back Extension.*

1. The patient lies prone on a firm surface, with his arms extended at his sides.
2. The patient is instructed to pull his scapulae together (retract) and then lift his head and shoulders without using his arms for assistance.

The above exercise should be preceded by simple instructions aimed at improving postural alignment with particular attention directed at reducing the obliquity of the pelvis through sustained contraction of the abdominal muscles. The patient is instructed to hold the chin in. The patient must "get the feel" of standing correctly.

Postural Drainage: Postural drainage constitutes a simple and effective method of aiding the lungs to expel the secretions which are so abundant in asthma, bronchiectasis and emphysema. Since man spends most of his time in the upright position and generally uses at least one pillow when reclining, bronchial secretions accumulate at the bases of the lungs which are farthest from their natural outlet. The cough reflex functions in the larynx, trachea and primary bronchi, but decreases rapidly beyond the latter so that there is a high degree of tolerance to the presence of pus and secretions in the distal portion of the bronchial system. Consequently these secretions collect there.

There are several methods of employing postural drainage. The method of choice is governed by the patient's tolerance. Most patients find the following technique very effective (Figure 6):

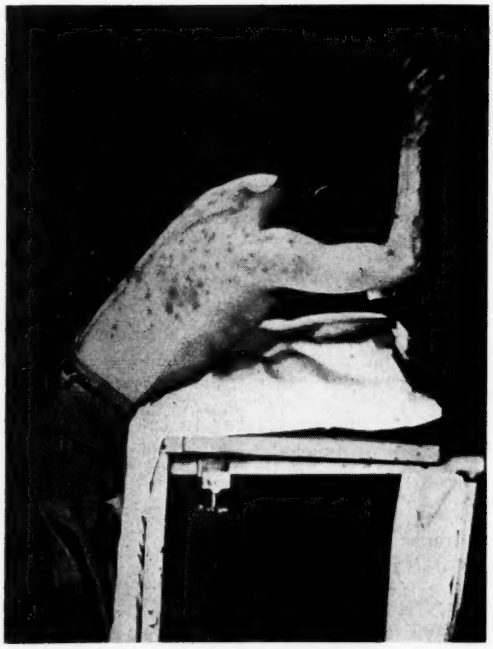

Figure 6. Postural drainage position from the movie "A Program for the Respiratory Rehabilitation of Asthma and Emphysema."

1. The patient is instructed to lie over the edge of the bed so that his trunk is flexed downward approximately to a 45 degree angle. To insure comfort and provide support, the patient rests his elbows on a low stool. This position is well tolerated and may be maintained for increasing periods, the duration of drainage depending on the condition of the patient.
2. The patient's chest is percussed while he is in the postural drainage position. This further facilitates drainage by helping to loosen adherent secretions.
3. The patient is encouraged to twist his trunk slowly while he is in the postural drainage position. This will often, but not always, promote additional expectoration.
4. Generally four five minute periods are utilized with one to two minute rest periods between. The patient is instructed to cough once each minute while he is in the head-downward position.

Another method which requires no equipment

is the knee-chest position described below:

1. Patent assumes the kneeling position.
2. With his knees flexed at 90°, the patient acutely bends from the waist and rests on his elbows.
3. To avoid fatigue the patient should return to the kneeling position to rest after 3-5 minutes. Rest periods should be short to prevent secretions returning to the bases of the lungs.
4. Raising first one shoulder and then the other to give each lung in turn more opportunity to drain, the patient continues in the above position for 15-20 minutes.

The sudden change into the head-downward position is sometimes distressing to adults, and with acutely ill patients it is usually impractical. In such cases elevating the foot of the bed 18 inches, which results in a 14½ degree angle incline is an effective means of facilitating drainage. Asthmatic children benefit from hanging inverted on a monkey bar or trapeze for short periods each morning. Most of them enjoy this type of activity.

SUMMARY

A program of therapeutic exercises for patients with asthma and emphysema has been presented. The chronic, relapsing and complex nature of these diseases makes it difficult to give a statistical estimate of improvement. Nevertheless the preliminary evaluation of the results obtained with ventilatory re-education shows promise.

Acknowledgment

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Educational Therapy for Mental Hospitals

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AS AN introduction to the subject it seems most appropriate to quote this passage from the Scriptures:

"My people are destroyed by the lack of knowledge;
Because thou hast rejected knowledge
I will also reject thee . . . ."

Hosea 4:6

Although re-education is currently spoken of in psychotherapy, education as such, does not enjoy much vogue as a factor in the maintenance of psychic homeostasis. It can be observed, for example, that presumably well educated persons not too rarely succumb to both minor and major mental disorders. But we cannot cast any of our formulations in the mold of the absolute. In mental disorders, we deal with the results of many forces. Education cannot be thought of as the summation of facts and figures but rather as the significance of facts in relation to each other, and in relation to patterns which are the foundation of attitudes, and an orientation to all those broad aspects of living which make for good psychic balance.

We are all aware of the protean character of reality. The practical psychological task for man is to erect a reality and frame of reference which will be most serviceable and yield the maximum of happiness and satisfaction. In the fortunes of the psyche there are many things which can upset its economy. It is almost a truism that every individual has a psychic as well as a physical tendo Achillis. To one man, status may be so important that any serious reversal in that respect is enough to precipitate serious mental disturbance; to another it is wealth, power, or love. This by no means exhausts the possibilities for psychic morbidity. The personality may and does frequently adopt goals in the pursuit of which a mistaken life plan may be generated which will contradict and clash with real, attainable goals. But excluding all more or less specific causes for emotional and mental disturbances, we may find that the weakness of the matrix and texture of the personality expose it to disruption and collapse upon impact with subliminal forces. If it is poverty-stricken, if it is of poor quality and weak texture, the probable consequences are a weak ego, a faulty sense of reality, and an unserviceable frame of reference.

Some data already exist to suggest a correlation between poverty of the personality and the incidence of the more severe psychic disorders. Redlich, et al[1] have derived some evidence to show a relatively high incidence of psychoneuroses in the upper socio-economic levels, but psychosis significantly higher in the lower socio-economic levels. It would seem justifiable to suggest that a contributing factor to the incidence of psychoses in the lower brackets might be deficiencies in educational and cultural influences.

But education, in the sense of biological and psychological conditioning is not the mere summation of facts and figures, although as part of the amalgam it constitutes, factual data usually can be extracted from it in considerable quantity. Neither is education a time interval spent in designated halls of learning, which interval is formally certified to by designated persons and institutions.

Education in its true and biological significance means the acquisition of a broad perspective of the surrounding world, leading to adequate attitudes and beliefs. It imparts a sense of relationship of man to man and to the universe he inhabits. It encompasses mature judgment in the light of abiding values. It is one

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means by which emotional maturity is acquired; also emotional stability, which is not founded upon insensitivity but rather is the fruit of a profound appreciation of the human scene, its significances, and connotations.

Have we swung so far in psychotherapy in our preoccupation with the manipulation of instinctual drives and effects as to lose sight of and generate a contempt for the role of conditioning and education in the maintenance of psychic homeostasis? Freud did not entirely lose sight of it when he voiced his hopes for the "future primacy of the intellect" in man's motives and behavior.

The contempt for pedagogy as an instrument of therapy is unwarranted on still other grounds. It is not difficult to demonstrate that what happens in the class of the skillful pedagogue is something more than mere exposition, and it should be recalled that it is often said of a professor or instructor, "he certainly knows his stuff, but he just can't teach." For it cannot be denied that what occurs in the class of the skillful pedagogue is a process akin to the transference of psychotherapy. The process of learning is not merely one of passive absorption, for its most powerful implement is motivation and the most successful teacher consciously or unconsciously comes to employ it through the transference relationship.

Even from a more or less technical point of view the close relationship between education and therapy is evident. It has been expressed by J.W. Powell[2] in the following:

"Education and therapy are complementary phases of a single process—the *learning* process as directed to the achievement of effective maturity. The extent of their identity has been obscured by their more salient differences in emphasis; the one upon mastery in the handling of *judgments,* the other in the handling of *feelings.* By an oversimplified aphorism, we could say that education teaches the individual how to examine *what he thinks* about what he feels important; therapy to examine *how he feels* about what he thinks important . . ."

This relationship of education and therapy was apparently keenly sensed by L. C. Marsh[3] whose observations on this point were forcibly expressed in these words:

"The mental patient should be regarded not as a patient but as a student who has received a 'condition' in the great subject of civilization as most of us understand it, and psychiatry should thus approach him with an intent to re-educate rather than with an intent to treat . . . ."

"I still object to calling a community of mental patients a hospital or organizing it as such, for the accent is then on the medical phase, and this phase should not, in my opinion, be accented. A community of mental patients is preeminently an educational-social-industrial community and should have on its staff members expert from these fields, as well as physicians. While there is much medical work to be done for mental patients it must be evident that the education-social-industrial challenge is a far greater one. I suggest the erection, for experimental purposes at least, of one institution based on this conception."

It should be remembered that a great many patients in state mental hospitals come from socio-economic strata of society where motivation for learning is of a poor order. Their experiences have often been miseducative, and not rarely one notices a resistance to what education truly constitutes. Poorly conditioned as they are to the processes of education, one can often surmise how much of the world has escaped them even by the very poor reading ability which so many evidence. The ineptitude in this function often is so intense, the simplest words offer great difficulty. With many of these persons it seems like a conservative guess that the function of reading was rarely exercised. This in itself, as far as the purveying of information is concerned, may be amply compensated for in modern times, since the many modern means of communication may make up the deficit. Even those who run may gather the news. What cannot be replaced is the particular atmosphere that more leisurely and more calmly perused material confers.

Judging from mental hospital patients, reading, both as recreation and as education, would seem almost a dying art. Plenty of reading material is at hand but the trend is toward digest and postage-sized periodicals, which creates the impression that reading, with a large section of the population, is a kind of necessary evil to be disposed of in the least time-consuming and

most casual manner. Whatever significance such trends may have for our culture it is certain that a large proportion of the state mental hospital's population seems only one step ahead of illiteracy. Their prehospital careers have apparently supplied them with little or no incentive for reading, learning, and enlarging the boundaries of their awareness. The old idyl of the child or even the adult curled up beside a fireplace and immersed in the reading of a good book has lost much of its vividness and appeal. We might speculate that the decline of reading other than comic books, newspapers, and digests may have something to do with the decline in the vividness of imagination and feeling for poetry.

Be that as it may, it does not seem unreasonable to believe that reading and the greater appreciation of the significance of various phenomena in the human scene enriches the consciousness and enlarges ego boundaries. It should also help in increasing ego strength. Experience in group psychotherapy seems to demonstrate to what extent the natural intellectual curiosity of the child has been dulled and dampened in adults, and especially in the institutionalized patients. Sometimes their reactions seem to suggest that because somewhere in their previous training and experience they had come to invest the processes of education with extreme artificiality and affectation, or that it was so forbidding and remote from everyday concerns, they had more or less completely avoided them.

Approached from the vantage point of the proper and specific contexts of current concerns, it may be discovered how the natural intellectual curiosity begins to revive. For example, in group psychotherapy sessions the discussion reaches the point where the group talks about the origins of life, what it is, and what maintains it. The therapist quite naturally draws on his store of biological knowledge. He talks about and illustrates the structure of cells, their metabolism and reproduction, and since a clinical laboratory is available he takes the group on tour to the laboratory and demonstrates a variety of blood and tissue cells under the microscope to these patients. Patients examine the slides under the microscope with awe, ask questions, and inspect other apparatus.

At present, at least one Illinois state hospital is planning to have classes in typing and shorthand. Apparently it is easier to recognize the utilitarian values of this training but subjects with far broader implications are not yet seen to have any connection with therapy.

The institution itself, in its various activities, constitutes a distinct miniature society. It contains enough of the elements of social problems to supply the material for a whole curriculum of studies. We might call it a kind of indigenous education which, sufficiently digested and absorbed, is a prototype and paradigm of the functional education sometimes sought after by educators. The teaching of Latin, Greek, and other subjects of a cultural trend of the past undoubtedly has its value, but cannot be brought into functional relationship with the problems of everyday living. The kind of education which may prove effective will arise from the needs of the situation. It is possible that, as a result of the institution of patients' courts and government, which has been done by the Boston Psychopathic Hospital, a desire might arise to get better acquainted with jurisprudence and legal practices. This might require some study of legal principles. If the patients' courts likewise adjudicate disputes in hours and wages, this might require study of labor-management relations and that may be the basis of another course of study. Whenever interest is developed on the part of a sufficient number of patients, which gives rise to a desire for a systematic study of the subject, a class can be formed and as far as possible integrated with the activity that gave rise to the demand.

But there is a great need for teaching the three R's. A considerable number of individuals may be prevented from achieving advancement on their jobs by lack of a high school diploma. Attaining a high school education makes such person better equipped for advancement as a result of his hospitalization. The educational program may provide regular accredited curricula for those who have not completed primary or secondary schools. In a few institutions it is actually being done. Marcy State Hospital in New York is an example. Certainly it would appear that there is no good reason to allow the patients' minds to lie fallow the entire duration of the hospital stay.

All the foregoing would also hold true for the arts. Thus classes in painting, sculpture,

dramatics, and music may be formed. Such contemplated programs would seem to add hugely to the budgetary requirements of an institution. Even so, the program could still be defended on grounds of economy, for it may be hoped that the discharge rate would increase, with consequent relief from overcrowding and the necessity for creating ever more space. But the program could be so operated as to add little to the total cost. It would provide just the right kind of opportunities for volunteer services.

One aspect usually insufficiently explored is the use of patients themselves in therapeutic ventures and this would provide a two-edged therapy — therapy for the patient-instructor, and therapy for the instructed. Most mental hospitals can count on a sprinkling of college graduates with good residual capacity. When the necessity arose during the war, and the institutions were badly undermanned, in some hospitals patients served as attendants on open wards and rendered an excellent account of themselves. Among the attendant corps it is common knowledge that these patients render a service superior to some of the average paid employee-attendants. The conception of patient education here stated seems visionary and radical because we are so accustomed to regard patients in the framework of the "asylum". It takes re-orientation to see the patient from the standpoint of rehabilitation and personality restructuring.

Our best efforts even under the most ideal conditions will not yield 100 per cent results. Initially, the percentage of more or less complete social rehabilitation may not be drastically altered. There may still be a considerable residue of regressed denizens of the back wards whose potential ceiling appear quite low. But even here, a sense of the dignity of man must dictate the aim of keeping personality functioning at the highest possible level. But we can conclude with confidence that in the long run the discharge and recovery rates will show a significant increase over institutions with a more static regimen.

An atmosphere vibrant with purposefulness and intellectual exploration is bound to exercise a profound attraction on individuals who might otherwise be averse from such considerations. In such an atmosphere the social pull on the individual in the direction of some achievement and social status, according to cultural and intellectual criteria, would be irresistible; and it need not be reiterated that they are powerful incentives. It may be contended, as a result of these projected means or techniques, the patient may leave the hospital in a much sounder state of integration, with greater ego strength and intellectual and emotional perspective than he ever possessed.

The immediate results of these programs may appear disappointing. Moreover, the metamorphosis of any hospital into the kind of institution contemplated here will be long and arduous. It will have to be persisted in for a long time before it bears its best fruit, and always the goals must be clearly kept in sight. However, the time will come when they are well established, and then the techniques and traditions of the institutions will exert their full force. We must see in this program, interaction between the institution and society at large. If this regimen becomes better known by the public in general, its acceptance by patients and their anticipations of its benefits will increase its effectiveness.

In searching for motives and incentives to form a nidus about which personality structuring can crystallize and which at the same time is a source of energy for the process, the pursuit of the fine arts stand out as preeminently effective. If the arts grow out of the current activities, the activities germane to the hospital's operation, they are then most logically motivated. For example, scene painting and decoration for the plays, pageants, presented by the patients, puppet making and manipulation, and playwriting. The satisfaction to the ego which patients who participate in a play enjoy can be deduced from watching the glow which lights up their faces and seeing the meaningful and purposeful energy with which the enterprise is approached. If the patient has been sufficiently stimulated to embark on the pursuit of an art totally unrelated to the hospital's occupations and solely for its own intrinsic values, it will serve the same purpose and should receive comparable encouragement. All of it leads to a perspective of the individual in society in relation to his fellows and helps to generate and revive the energies and social interests which make for the desired adjustment.

For example, a patient in an institution has a flair for music. He has a good voice and has taken the lead role in several operettas performed by the patients. He composes and has written several musical plays for presentation. He takes another fellow, dull to borderline intelligence with psychosis, under his wing and teaches him singing. To watch this pupil, to see his eyes light up with a new, unaccustomed glow when he speaks about his singing is to realize that a very deep-seated recuperative process has been tapped. He is finding a new focus in life, a new meaning. He comes to his doctor asking rather imperiously, "Doctor, I want you to come and hear me sing," and his request indicates the discovery of a newly found source of mental energy. One may discover the same thing in every other art. Puppet-making and playing may lead logically to a study of the drama and the theater arts. Publication of an institutional magazine should lead to an interest in journalism and the graphic arts. Book reviews will make him further acquainted with the broader fields of literature.

These pursuits are not the sharp focus of psychotherapy but any considered opinion will find that they facilitate it. The same may be said of the various occupational therapies. There may be intrinsic value in such occupations as rug-weaving, toy-making and sewing, but where some occupation germane to the patients' activities in the hospital intrigues a patient it would appear in the long run preferable to allow him to pursue his bent and not to attempt to force him into a stereotyped activity simply because it is labeled "occupational therapy". Where the patient manifests no choice one may exert gentle pressure to bring him into some activity that will occupy him and revive his human social interest. If this task is sufficiently accomplished so that he is brought into the current of the hospital's activities, it will have served is purpose.

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Hypertensive therapy

Of four basic hypotensive drugs or their derivatives, 38 preparations in more than a dozen colors and shades have come to my attention. This count does not include dosage forms, sirups, or parenteral preparations. Eleven of these are combinations of two drugs; five are combined with a third less specific drug. Equally colorful brochures and advertisements present the manufacturers' attractive claims for the various drugs, which may be listed as a composite therapeutic triumph: tranquilizing and sedative, without danger, tolerance, or side-effects; for the average case, the most effective single hypotensive agent available, significant blood pressure reduction in 80 per cent; potent long acting, will enable the physician to manage 90 per cent of his cases; for hypertension, angina pectoris, nervousness, and psychoses, *Robert Sterling Palmer, M.D. Essential Hypertension: A Selected Review and Commentary. New England J. Med. June 2, 1955.*

Banthine (Methantheline Bromide) as a Premedication Drug in Pediatric Anesthesia

LUKE TAJIMA, M.D., CHICAGO

BANTHINE® (B-diethyl-aminoethyl xanthene-9-carboxylate methobromide) is a unique atropine-like substitute used in the therapy of peptic ulcer[1]. Banthine derives most of its unique pharmacological properties from its chemical structure, the quarternary amine structure, which suggests autonomic ganglion blocking property.

In small doses its predominant action is one of a parasympathetic neuro-effector blockade; that is, it has an atropine-like effect on the postganglionic nerve endings of the parasympathetic nervous system. When used in moderate doses it resembles the pharmacological effect of the tetraethyl ammonium compounds; that is, a blockade results of all autonomic ganglia, the sympathetic as well as the parasympathetic nervous systems. Thus Banthine acts simultaneously on the paraympathetic and the sympathetic nervous systems. When used in large nonlethal doses it exerts a reversible curare-like action on the skeletal muscle.[2, 3]

During chronic tolerance studies, some of the side actions noted were blurring of vision, xerostomia, and inability to void in the presence of prostatic hypertrophy because of the relaxation of the smooth muscle of the bladder[1]. One of these side effects, xerostomia, was utilized to study the effect of Banthine as an antisialogogue premedication for general anesthesia. It has been used in conjunction with procaine amide and its anti-sialogogue potency is reported to be far superior to that of atropine.[4]

As an antisialogogue the dosage of Banthine was 1 mg. per year of age for children between 1 and 10 years administered parenterally[4]. This working dosage scale approximates the dosage range of 0.2 to 0.4 mg. per kilogram of body weight which was found to be pharmacologically active by studies on man[1].

Chronic tolerance studies on rats and dogs with Banthine showed a wide margin of safety between the pharmacological dose and the LD 50[5]. Sensitivity, toxicity, and dosage have been studied in children, infants, and newborns. The study showed a wide margin of safety between the pharmacological dose and the dosages causing early signs of toxicity such as fever, dryness, flush, mydriasis, tachycardia, and vomiting. These signs are similar to those of atropine intoxication[6].

METHOD OF STUDY

This present study of Banthine as an antisialogogue was done over a six months period with 100 children between the ages of 1 and 10. It was the sole premedicating drug used and the open drop method of induction with vinyl ether and ethyl ether and maintenance of anesthesia with ethyl ether was employed. Tonsillectomy, adenoidectomy, and circumcision were the principal types of surgery. Banthine was used in two concentrations: as a 5 mg. per milliliter solution and as a 10 mg. per milliliter solution. Normal saline was used as the diluent of Banthine powder. The more dilute solution was used in younger children for easier and more accurate administration. Since Banthine is an ester which hydrolyzes slowly, the solution was changed every two weeks. Banthine solution was given parenterally, either intramuscularly one-half hour preoperatively or subcutaneously one hour preoperatively.

RESULTS

Two factors prior to induction and during induction were noted: the presence of any signs of toxicity and the amount of salivation during induction. In 9 of the 100 cases flush was detected but in only 3 was it marked. There was no appreciable mucous secretions in 89 cases; 8 cases had slight quantity; and 3 cases, a moderate quantity prior to and during induction. The last 3 cases received their premedication intramuscularly about two hours prior to surgery. This is a relatively high incidence of lack of undesirable secretions in inductions with the open drop method and although no comparable series was studied with adequate doses of atro-

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pine, the clinical impression gained after the study with Banthine as an antisialogogue is that it appears to be a potent drying agent, probably more so than atropine.

Postoperatively there were no cases of fever or inability to urinate in the 100 cases. All the posttonsillectomy and postcircumcision cases were sent home the day of surgery. The incidence of postoperative nausea and emesis, though difficult to evaluate, was made simpler since only one nurse was in charge of the posttonsillectomy and postcircumcision room. The impression was that the incidence of postoperative vomiting was less in the children premedicated with Banthine than otherwise as indicated by the linen changes.

DISCUSSION

This antisialogogue property of Banthine is enhanced and brought about by means of two mechanisms of action: the drug is predominantly a parasympathetic depressant in small doses and acts through a postganglionic blockade; in moderate doses, it blocks the ganglion cells of both the parasympathetic and sympathetic nervous systems. Thus Banthine in moderate doses acts doubly on the parasympathetic nervous system. at the ganglion and the postganglion. The dosages used in this study were from 0.1 to 0.4 mg. per kilogram body weight and constitute small and moderate dosages.

The use of the open drop method of induction and maintenance with ethyl ether as the primary anesthetic agent in the nonsedated child provides the most severe test for any antisialogogue. Therefore, this study was conducted with nonsedated children undergoing general anesthesia predominantly for tonsillectomy, adenoidectomy, and circumcision and utilizing the open drop method of anesthesia.

The working dosage scale of 1 mg. per year approximated the 0.2 to 0.4 mg. per kilogram pharmacological dosage range in the average child. However, in younger children the dosage computed on the age basis falls below the 0.2 mg. per kilogram dose. Therefore, for children of 1 to 2 years of age and for children who appear markedly lighter or heavier than other children of their respective ages, dosage should be computed according to weight. Toxicity studies mentioned elsewhere in this paper revealed that infants of 4, 6, and 8 weeks of age could tolerate Banthine dosage of magnitudes such as 6 and 12.5 mg. parenterally for several doses[6], whereas such amounts would have been given to 6 and 10 year olds in this present study. Thus this wide tolerance range indicates the drug is relatively safe.

Banthine given subcutaneously seemed to afford a wider range of effective time than that given intramuscularly. However, when given by the latter route, its effect has been noted frequently within 10 minutes and in almost all cases within 15 minutes, but the duration of effectiveness appears to wane after one hour and almost certainly after 1½ hours.

Subcutaneously, Banthine is effective within 20 minutes and lasts almost two hours. The intramuscular route probably is preferred when there is only a short time for preparation for surgery such as in emergencies. Banthine solution may be kept at room temperature for two to three weeks without loss of activity.

The loss of reflex inhibition properties of atropine when Banthine is substituted was not evaluated in this study. However, some studies have been made showing that Banthine possesses reflex inhibiting property[7].

SUMMARY

A study of the antisialogogue effect of Banthine a quarternary amine with ganglionic blocking properties and postganglionic atropine-like effect, in 100 children between the ages of 1 and 10 years is presented. Minimal, negligible toxic effects were noted. Rapidity of onset by the intramuscular route and excellent drying effect for the appropriate length of time were observed.

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The Father of Chicago Medicine

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THE state of medicine in any large city is a composite of the work, the abilities and the ideals of many men both within and out of the medical profession itself. It is determined by the unselfishness and generosity of its leading citizens, the character of its educational institutions, the contributions of chemists, physicists, and of other scientists, as well as the ability and devotion of the practitioners of medicine. Forty years ago when I made known my desire to study medicine, the doctor in the small western town where I was born remarked, "So — you will go to Boston, Philadelphia, Baltimore or Chicago." At the time I was a little surprised that these particular cities should be singled out above many others in the United States, but even today it is probably true that the present high position of American medicine in the world is due chiefly to the contributions of these centers. How did Chicago come to occupy such an enviable position as a leader in medical education, practice and research? Wealth and a philanthropic spirit in its citizens are not sufficient. Detroit and Pittsburgh, to name only two great cities, have had no dearth of these but have nevertheless remained deserts both with respect to medical institutions and outstanding physicians. Chicago, however, has produced many men whose names are known wherever scientific medicine is discussed. Among these are usually listed the names of Daniel Brainerd, Nicholas Senn, John B. Murphy, Arthur Dean Bevan, L. L. McArthur, Frank Billings, N. S. Davis, Bertram Sippy, James B. Herrick, Ludvig Hektoen, A. J. Carlson, H. G. Wells, D. B. Phemister, and many others.

Frank Billings was for many years the most eminent medical figure in Chicago, and perhaps also in the nation. No physician in Chicago was so successful in commanding the respect and affection of the medical profession and of the city's most important citizens. Professor of Medicine and Dean of Rush Medical College, Dr. Billings by his dominant personality, unselfish spirit, and ability was the leading force in medical education. Largely through his personal efforts the clinical departments of medicine and surgery were established at the University of Chicago. In discussing the work of Dr. Billings, the following revealing incident of his student days was related to me by Dr. D. E. Clough of Glendale, California who returned to Chicago in June, 1952 to attend the 50th anniversary of his graduation from Rush Medical College. Dr. Billings was just about to begin his Clinic for the Junior and Senior medical students in the amphitheater of the old Rush Medical College building on West Harrison Street. About 150 students were present, including visiting physicians, for Dr. Billings was an impressive and popular teacher. As he came forward and grasped the lectern preliminary to making a few remarks about the patient that was to be presented, student Clough sitting in the front row arose and said, "Dr. Billings, tell us something about the last illness of Dr. Fenger." Dr. Billings looked earnestly at the questioner, then at the students, removed his gold-rimmed, old fashioned, angular spectacles, and with tears in his eyes said, "Not today, gentlemen, not today. All that I am or ever expect to be in life I owe to Christian Fenger."

In April, 1932 the American Society for Clinical Surgery held its annual spring meeting at the Mayo Clinic in Rochester, Minnesota. After the scientific sessions were over, Dr. Will Mayo invited the Society for a pleasure cruise on his yacht on the upper Mississippi. Some thirty-five visiting surgeons, together with Drs. Will and Charles Mayo made up the party. In the afternoon while most of the guests were outside on the deck enjoying the scenery provided by the bluffs of the upper Mississippi, Drs. Will and Charles having passed this way many times before, were sitting by themselves in a stateroom. Dr. Will beckoned to me to come over and sit with them. "You are not interested

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in our beautiful Minnesota scenery?" he inquired. "Yes," I replied, "but I am more interested in this opportunity to converse with you. Would you be willing to tell me who the medical teachers were who had the greatest influence in shaping your careers as surgeons and medical administrators?"

As was his habitual custom, Dr. Charles looked up to his older brother, Will, as if to pass the question on to him. Dr. Will looked out of the window for some little time, and then spoke with deep conviction.

"We owe a lot to Drs. Mikulicz of Prague and Joseph Price of Philadelphia. However, the man who taught us most, and who was chiefly responsible for our development in medicine was one of your fellow townsmen."

I looked at Dr. Will Mayo for a moment, and then said, "Could it be Dr. Christian Fenger."

"Yes," he said, "Christian Fenger was the greatest teacher we ever had, and the greatest influence in the development of our method of practice."

One evening not many years ago at a meeting of The Chicago Literary Club, I had an opportunity to speak with Dr. James B. Herrick. In response to my question as to who of his teachers had exerted the greatest influence in his development, Dr. Herrick without hesitation replied, "Christian Fenger. Fenger taught all of us. He taught John B. Murphy, Nicholas Senn, A. J. Ochsner, Dean Lewis, Ludvig Hektoen, and L. L. McArthur. He taught all of us. He brought scientific medicine to Chicago. He was an excellent pathologist. He was a surgeon, too, but my God, how slow he was and how clumsy! He knew his stuff, though, but he was not a good speaker. He had a low mumbling voice and his words were often lost in his whiskers, but what came through was well worth listening to."

Dr. Ludvig Hektoen acknowledged the contribution of his teacher in a somewhat different vein. "The fundamental function of medicine is research. Research is the base of all its activities. The treatment of disease and injury, the education and training of physicians, the education of the public, all are based on the knowledge created by research as compounded of experience, observation, and experiment. Fenger's great service was that he illustrated and exemplified more than anyone else of his day in this center, the mighty significance of research in medicine. He made the best use he could of the opportunities he had to advance the understanding of disease, its diagnosis and treatment. In his writings the word research was used seldom, but the spirit of research prevailed in all his work as pathologist, teacher, surgeon, and consultant."

Christian Fenger was born in Breininggaard, Denmark on November 3, 1840. His father was a landowner in moderate circumstances. There were twelve children in the family, and, as Christian says, his father worked hard to give nearly all of his seven sons an opportunity to study. Love of the natural sciences prompted Christian to begin advanced studies at the Polytechnical School with the intention of becoming a civil engineer, but after a year he yielded to his father's wishes and began the study of medicine. During this period he earned a part of his expenses by teaching in high school and later by giving instruction to medical students in anatomy, and by coaching students of dentistry for their examinations.

The medical faculty of the University of Copenhagen at this time was of excellent quality, and Panum, the physiologist; Schmidt, the anatomist; Reisz, in pathology; and Mathias, Saxtorph, and Buntzen, in surgery were among the best in Europe. War between Denmark and Prussia interrupted Fenger's medical education and he served for a year as Assistant Surgeon in the Augustenborg Hospital under the Physician in Chief, Professor Studsgaard, whom he always afterward thought of with admiration and friendship. Following his graduation in 1867, he worked for two years as an assistant in the clinic of Hans Wilhelm Meyer and took part in Meyer's celebrated investigations on adenoid vegetations in the nasal pharynx. From 1869 to 1871, Dr. Fenger served a two-year internship in surgery at the Royal Fredericks Hospital in Copenhagen, although his appointment to this position had been opposed by Professor Saxtorph, Chief of the Surgical Division, because Fenger had previously worked with the German, Meyer. In reference to the situation Fenger said, "During the two years that I served as intern not a word was spoken between Professor Saxtorph

and me." It is possible that this enmity may have played an important role in Fenger's subsequent career. During his internship Fenger wrote an essay on certain bone operations which was accepted by the University, and at the same time conducted experiments on gunshot wounds of horses at the Royal Veterinary College and constructed instruments for the purpose of finding bullets in the tissues and removing them. The publication of his paper entitled, "Concerning the Endoscopy of Gunshot Wounds," led to a grant from the Royal Danish Ministry of War, which permitted him to take part in the Franco-Prussian War of 1871, under the auspices of an international ambulance service led by Professor Socin of Basel, Switzerland. After the Franco-Prussian War, Fenger went to Vienna where he studied pathological anatomy and surgery, coming under the influence of the great surgeon. Theodor Billroth and the famous pathologist, Rokitansky. On his return to Denmark, he was appointed Prosector to the City Hospital in Copenhagen, where he worked for four years and had an opportunity to study pathology and conduct many post-mortem examinations. During this time he wrote an article on cancer of the stomach in which he described his extensive studies on the growth of cancer cells in the wall of the stomach and extending along the nerve fibers and blood vessels. This study of cancer of the stomach was an important contribution and one of the first attempts to account for the pain characteristic of this disease. He also made studies on the kidney and the heart, and wrote papers which were marked by accurate observation and clear, orderly analysis of the problems raised.

In 1875, during the illness of Rasmussen, Professor of Pathological Anatomy, Fenger was appointed a docent in the University and took over the instruction of students in pathology. Following the death of Professor Rasmussen, the chair of pathological anatomy became vacant and Fenger prepared to take part in the competition for this position, but to his surprise, and contrary to the usual custom, the place was given to Professor Carle Lange without competition. Although interested in surgery, the antagonism of Professor Saxtorph prevented Fenger from securing a position in the surgical department and, consequently, feeling that his road to an academic career in Denmark was blocked, he decided to go abroad in order, as he said, to reach an independent position more rapidly. With the aid of borrowed money Christian went to Egypt where his brother, Dr. Sophus Fenger, had preceded him and had entered upon the practice of medicine in Alexandria. Christian took over his brother's practiee when the latter returned to Denmark to be married, and subsequently went on to Cairo where he secured a salaried position as a District Physician under Dr. Bay, Chief of Medical Affairs in that city. While in Cairo, Fenger investigated Egyptian eye disease (trachoma) in the children in the public schools and made a report about it to the government. He also made investigations of a highly fatal epidemic disease of the respiratory organs in horses and mules, and his published report revealed a remarkably thorough study of this disease. He regarded the disease as infectious, supposing the poison to enter the respiratory tract in the air. He recommended that healthy horses be protected by covering the head with a mask of cotton treated with a solution of carbolic acid and then dried, and that the diseased horses be carefully isolated from the normal animals. These reports indicate that Fenger was well aware of the new bacteriology developing in the wards and laboratories of Pasteur, Lister, and their contemporaries.

Fenger was investigating bilharziasis in a large military hospital when he developed dysentery, followed by inflammation of the liver. He recovered but when the disease recurred, the following year, Fenger decided to leave Egypt and go to a temperate climate. He states that in Cairo he had been a physician for a part of the American colony and among them certain American officers whom the pasha had brought in in order to reform the Egyptian Army. The wife of one of these officers, who came from Bloomington, Illinois, assured Dr. Fenger that dysentery was unknown in that city, and that a doctor of his ability could make a good living there. Fenger resigned his position in June, 1877 and traveled by ship from Alexandria to Liverpool, and thence to New York. When he arrived in Chicago his funds were practically exhausted and acting on the advice of a countryman, Dr. S. D. Jacobsen, who told him that he might as well locate in Chicago as any other place, Fenger decided to stay.

General practice in a small office over a saloon on Green and Indiana streets, in the Scandinavian settlement, supplied a meager living and enabled Fenger to begin his acquaintance with the medical men of Chicago. He immediately recognized that his colleagues had no knowledge of the pathology and physiology with which Fenger had become so thoroughly conversant as a teacher in Copenhagen, and accordingly he looked for an opportunity to teach these sciences. In the spring of 1878, he secured a position as physician to the Cook County Hospital, where he began to give lectures and demonstrations in pathological anatomy, a science which, as he states, was entirely unknown to the physicians there. At that time, the County Commissioners of Chicago were perhaps the most corrupt in its history and one thousand dollars was the price medical men were required to pay for an appointment on the hospital staff. It was reported that Fenger was able to make this payment as a result of money he received from the sale of a mummy he had brought with him from Egypt. Doubtless, the purchaser of this mummy was the father of the genial exhibitor of Old Timer, so delightfully described by our fellow-member, Mr. Shilton, some years ago.

A revealing account of Dr. Fenger's first work in the County Hospital was given by Dr. L. L. McArthur, one of Chicago's leading surgeons, then a student at Rush Medical College.

"As a newcomer and with few friends, Dr. Fenger was given for his clinic the inconvenient hour from 1:00 to 2:00 p.m., an hour never before assigned to an attending man for a clinic. 12:00 to 2:00 p.m. in all previous years was set aside for luncheon, rest, and recreation. Following custom, the students failed, at first, to attend in any large numbers. Thus it happened that Dr. J. B. Murphy and myself, fascinated by Fenger's wonderful techniques in making a post-mortem examination; thrilled by the revelations each necropsy offered, and rewarded by his efforts to convey to us the information that should have gone to the entire class, were constant attendants during these first months, one taking down the findings, the other sewing up the cadaver. Undoubtedly this experience remained ever after a potent factor in J. B. Murphy's future development, as was later true of so many others. Fenger quickly saw and accepted the importance of surgical antisepsis and asepsis. In this he was a pioneer. The introduction of Listerian methods in the County Hospital through the influence of Christian Fenger caused me physical pain, for I was the junior to whom was delegated the dressing of every open wound or sore. Thus, in the hospital all of the leg ulcers, inflamed ingrowing toenails, felons, etc. must be dressed under a spray of 5% phenol, washed with 2½% phenol, covered with eight layers of gauze, one layer of mackintosh and a ninth layer of gauze outside, a useless layer. This meant dressings from 8:00 a.m. to 6:00 p.m. daily and no trained nurses. But soon there began to be healings per primam shown at first with pride to the staff and interns, and later as something to be expected; finally, if the desired result was not obtained, it was a reproach to someone."

"After the first two years as pathologist at Cook County Hospital Fenger had so thoroughly impressed the staff with his familiarity with surgical problems, that the members of the surgical staff left him in charge of the services during vacations. With these opportunities for surgical demonstrations, appointment as attending surgeon soon followed, and for fourteen years he was actively engaged with every kind of surgical problem. During all these years he constantly accumulated specimens of every type of surgical pathology."

Concerning Chirstian Fenger and this period, Ludvig Hektoen wrote, "He was part and parcel, the very influence of a definite period of Chicago pathology and surgery. There will never be another Christian Fenger, not because a similar person may not appear, but because the period in which Fenger lived and worked will not be dupliated. Surgery, an ancient but somewhat limited art, was changed practically within his generation into a potent and progressive branch of medicine. He made important additions to surgical science in the face of heavy burdens and laborious ways of working. Think for a moment of the labor and time spent on surgical operations in homes even in the latter part of the horse and buggy era. Major operations were performed in private houses of every sort and there was no such thing as a properly equipped operating room in any hospital in Chicago.

The lack of medical libraries in Chicago, un-

til well toward the end of Fenger's life, was a serious obstacle to his scientific work. Nevertheless, he carried on literary and investigative work almost from the start. He did his reading and writing at home and provided himself with books and periodicals he most needed. After his death, the collection of some six thousand items was given to Rush Medical College. In clinical lectures and demonstrations he reviewed the topics under consideration with much greater completeness and detail than was the custom of his colleagues. He liked to trace the growth of knowledge on a given subject. While his speech was halting and subject to any interruptions, stenographic reports of his lectures would reveal a beautifully clear and orderly presentation. He never relied overmuch on his own knowledge, but spent long hours in the night preparing his clinics. His writings all bear the stamp of the thorough scholar with a logical clear-thinking mind. His style is direct and vigorous.

With his special knowledge and interest it was inevitable that Fenger should remain closely associated with medical schools and hospitals during his entire career. In 1880, he was appointed curator of the Museum at Rush Medical College, and in 1884 was made Professor of Surgery in the College of Physicians and Surgeons, and Surgeon in Chief at the Passavant Hospital and the German Hospital when these two were founded. In 1893 he became Professor of Surgery in the Chicago Medical College, later to become the Northwestern University Medical School, and Chief Surgeon at Mercy Hospital. In 1899, he left Northwestern to become Professor of Surgery in Rush Medical College and attending surgeon in the Presbyterian Hospital.

In 1900, on his 60th birthday, a testimonial banquet was given for Dr. Fenger and attended by 500 physicians, made up largely of former pupils and friends from the Chicago area and all parts of the United States. He was presented with a loving cup on which was engraved his portrait and an inscription from the American Medical Association. Nicholas Senn presented him with an album containing autographs of those present at the banquet, and the following year he was honored by the King of Denmark with the Order of Knight of Dannebrog. In the later years of his life, Dr. Fenger was often depressed and thought some of returning to Denmark to spend his old age. The testimonial dinner and the fine demonstration of appreciation by the men of his profession, however, affected him deeply and on returning from the dinner he said to his wife, "We won't go back to Denmark. I shall live and die in America."

After his return from a trip to California, in the late winter of 1902, Dr. Fenger was stricken by pneumonia and died at his home in Chicago on March 7. His request that a post-mortem be performed was complied with and this revealed, in addition to pneumonia, evidences of healed tuberculosis of the lungs and gallstones.

During his twenty-five years in Chicago, Fenger wrote many papers which were published in the surgical and pathological journals of his adopted country. After his death they were collected and republished forming two large volumes. When read with the knowledge of the present day these papers are not impressive and cannot account for the extraordinary influence that Fenger exerted. They are not to be compared with the scholarly and historical writings of William Stewart Halsted of the Johns Hopkins Medical School and yet the impression that Fenger made upon his students and colleagues rivaled that of his eastern contemporary. Perhaps the explanation is best given in the words of James B. Herrick, former president of this Club, and one of the greatest of Chicago's medical men, in his book *Memories of Eighty Years.*

"The two Chicago surgeons who for many years were most widely known in this country and abroad were Nicholas Senn and John B. Murphy, both of whom by the way always acknowledge their indebtedness to Christian Fenger. They were great teachers and practitioners of surgery as well as investigators. Why did Senn and Murphy leave as successors no group that can justly be called the Senn or the Murphy School? Why was it that Fenger left what is often referred to as the Fenger group of pathologists, surgeons, and physicians? Senn and Murphy were eagerly listened to by thousands of students and practitioners—by many more in fact, than heard Christian Fenger. Doctors still tell of the lessons they learned from Senn's dramatic amphitheater clinics, or Murphy's Socratic method of teaching. But there was something lacking in these two, a something that Dr. Fenger possessed. It is difficult to ex-

press it in one word. Was it not largely humility, effacement of self, a sincere effort to work not for the sake of personal glory but to help the other man."

Today, after more than 40 years, at the mention of his name my heart again responds with a quickened beat and my eye grows misty. Again I see before me the simple, plain man with his kindly smile and cordial greeting. In memory he is still the great, the learned, the wise surgeon, beloved not because he was a super-human but very human being, a man who, as John Buchan said of another, was greater than any of his achievements. His personality was in itself his greatest achievement."

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Arterial graphs

A study of arterial injuries and subsequent amputation in World War II in which ligation of the involved artery was the accepted form of treatment, serves as a good control for the treatment of these injuries by other methods. With simple ligation, for example, the incidence of amputation following wounding of the brachial artery was 26 per cent, femoral artery 53.2 per cent, and popliteal artery 72.5 per cent. Newer techniques now permit a more successful approach. Not only is lost blood replaced and bleeding controlled, but the arterial channel itself is preserved thus saving limb as well as life. In approximately 75 cases of arterial injury this had been accomplished in most instances by primary repair of the patient's injured artery. In 10 patients, homografts were required to bridge the defect in extensive arterial wounds. There were three brachial, six femoral, and one radial injury in this group. All grafts were patent at the time of discharge of the patients, and have continued to function in all but one. This graft became occluded more than a year after operation, after a good collateral blood flow had developed and at this time continued to have palpable but diminished pedal pulses. This patient has intermittent claudication but no patient in whom a graft was inserted has had an amputation. *E Stanley Crawford, M.D. et al. Use of Arterial Homografts in 90 Peripheral Arterial Lesions. Texas J. Med. Oct. 1955.*

Meat, potatoes and vegetables

In food, vitamin B12 usually is associated with animal protein; it has been detected in only one or two vegetable foods such as groundnuts. Vegetarians, even in temperate climates, might, therefore, be short of this vitamin and if a purely dietary deficiency ever occurs, it is among vegetarians that the evidence might be found. Wokes et al. have investigated this matter. They appreciate the fact that the ordinary British vegetarian consumes quite a lot of animal protein in the form of milk, butter, cheese, and other dairy products. The proportion of total dietary calories he gets from animal protein is just under three per cent whereas in the average nonvegetarian diet in the United Kingdom, the figure is about six per cent. *Editorial. Nutrition and Vitamin B12. Lancet, Dec. 3, 1955.*

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Prolonged hospitalizations

Many beds in state operated as well as private hospitals are occupied by patients who could be cared for in nursing homes or the homes of members of the family. Obituaries have been published recently in some of our newspapers recording the death of old people who were hospitalized from five to 13 years. *B. Frank Rosenberry, M.D. The Geriatric Viewpoint of Chronic Illness Problems and Solutions. Pennsylvania M. J. Nov. 1955.*

COOK COUNTY HOSPITAL CASE RECORDS

Volvulus of the Cecum

ELI T. SAMET, M.D.*, WILLIAM MCMILLAN, M.D., FACS AND EDWARD SCHNELL, M.D.*, CHICAGO**

VOLVULUS may be defined as an obstruction caused by a twisting of the bowel upon itself so that its lumen is closed by the pressure of a part of the intestine continuous with it or its mesentery.[1] The degree of the twist (number of revolutions) determines whether a partial or a complete bowel and vascular obstruction occurs.

In the last five years (1949-1954 inclusive) only three cases of volvulus of the cecum could be found in the records of the Cook County Hospital.

River et al, in an excellent article, discuss the etiology of volvulus of the cecum. They state that "not only must hypofixation of an adequate degree be present but, that some degree of hyperfixation of the ileum, cecum or ascending colon supplies the fixed point of the rotation."[2] They conclude that this anatomic predisposition is the primary factor and that various physiologic maladjustments are the inciting cause.

The importance of recognizing this entity is that there is no survival with conservative treatment of the complete and non-reducing type. Reducing the volvulus and fixation of the cecum prevents recurrence.

The diagnosis depends on a history of bowel obstruction and certain X-ray criteria:[3]

1. Dilated cecum lying in a very abnormal position.
2. Loops of small bowel to right of distended cecum.
3. Ileocecal valve lying to right of distended viscus.
4. Twisted mucosal folds may occasionally be seen in simple films of abdomen by contrast with surrounding mucosa.

W.V., a 44 year old colored dishwasher, was admitted to Cook County Hospital on July 12, 1954 complaining of nausea, vomiting and generalized abdominal pain. He was "perfectly well" until two weeks prior to admission when he experienced mild episodes of nausea and generalized, cramping, abdominal pain which seemed to radiate into his right leg. These were relieved by self induced emesis and a laxative. He was asymptomatic until three days prior to admission when he awakened from his sleep nauseated followed by a vomiting episode. Four hours later he experienced intermittent cramping and lower abdominal pain every half hour for the rest of the night. On June 30, 1954, he was seen by a family physician who prescribed a sedative. On July 2, 1954 his family doctor recommended hospitalization.

The patient stated, on admission, that he had passed no gas per rectum or had a bowel movement for forty-eight hours but, that he had eaten only a small amount of liquids and no

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Figure 1. Flat plate of abdomen.

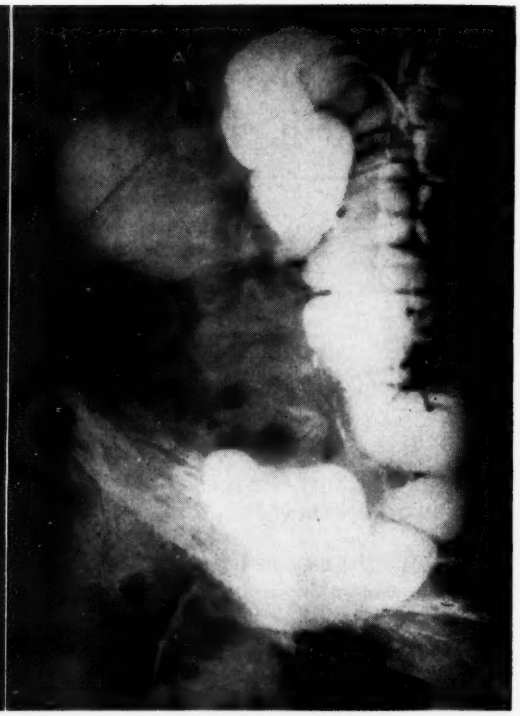

Figure 2. Barium enema.

solids in the past few days. He revealed that his emesis was at first clear, later green, but at no time black, red or feculent. For several years, he had experienced epigastric distress about one-half hour following meals which was relieved by food and soda. Other past and family history were non-contributory.

On admission, the physical findings were that of a well developed, well nourished colored male in some acute distress. The eyes, ears, nose, and throat were negative for pathology. The abdomen was distended, measuring thirty inches at the umbilicus. There were no operative scars, rigidity or localized tenderness but some generalized rebound was reported. The bowel sounds were hyperactive with occasional rushes but no high pitched tinkling sounds. The rectum contained no stool and the scrapings from the examining glove were benzedine negative. BP 130/104; Pulse 104; Temp 100°(R); WBC 8,400; hb 90%; Urine—negative for sugar, albumin, cells, acetone; NPN 40; Urine amylase 32; Blood Amylase 16; TP 7.7; Cl 95; Na 138; K 4.0; Alkaline Phosphatase 2.5.

W.V. was placed on Levine suction, and intravenous fluids. Emergency X-rays were ordered. The chest X-ray was normal. Flat plate of the abdomen (Figure 1) showed distended loops of small and large bowel but no air in the rectum. A barium enema (Figure 2) revealed an obstruction at the hepatic flexure with twisted mucosal folds at this point.

The patient was explored as an emergency. Loops of distended ileum were first encountered. The cecum and ascending colon were not in their proper position in the right iliac fossa. A mass, measuring approximately six inches in greatest diameter, which proved to be cecum, was located in the right upper quadrant. It was rotated approximately 180° in a counter-clockwise direction. After detorsion, it was found that the lateral peritoneal reflection of the ascending colon extended only about two inches from the hepatic flexure. The cecum, after reduction of the volvulus, was fixed in the right lower quadrant with interrupted fine black silk sutures.

The postoperative course was complicated by a period of electrolyte imbalance. A barium enema performed on July 20, 1954 was reported as normal. W.V. was discharged asymptomatic on August 4, 1954.

SUMMARY

A case of volvulus of the cecum in an adult male is presented. The diagnosis of this entity depends primarily on a history of bowel obstruction and certain X-ray criteria. Surgical intervention, with reduction of the volvulus and fixation of the cecum is the treatment of choice.

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The pathologist

The story is told of the physician who went to a medical meeting one wintry day some years ago. Approaching the place of gathering, he noted a line of Cadillacs. "I see the surgeons are here," he said. Seeing next some Buicks, he stated, "The internists are here also." A line of Fords caused him to say, "Well, the pediatricians came too." He entered a building and noted a group of well worn, wet overshoes. "Ah!" he exclaimed, "and here are the pathologists."

Times really have changed, both professionally and economically, for the pathologist. No longer is he considered to be somewhat of a medical recluse who chose to fossilize himself with formaldehyde because he did not have the capabilities to become a surgeon or an internist. The modern clinical pathologist probably is expected to know more about the multitudinous fields of medicine both diagnostically and therapeutically than is any other specialist. Recent developments in medicine have drawn him intimately into contact with both the scientific practice and the administration of such fields as clinical chemistry, blood banking, radioactive isotopes, hematology, and forensic medicine, to mention only a few. The pathologist certainly is a leader in many of the facets of postgraduate medical education, as witnessed by the fact that in hospital after hospital, he is in charge of the teaching program for interns and residents and is responsible for the major part of the clinicopathologic conferences and the general staff meetings. *George G. Stilwell, M.D. Minnesota Med. Dec. 1955.*

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Not a waiting room

Parenthetically, let us never make the mistake of referring to the doctor's reception room as a waiting room. My father, who practiced general medicine in a New Jersey summer resort town for more than 60 years, was keenly aware of the distinction between a waiting room and a reception room. As far as I know, the well lighted, attractive, spacious, and comfortable room in which his patients awaited their turn to see him was never called anything but a reception room. *James E. Bryan. The Doctor and his Office. Pennsylvania M.J. Nov. 1955.*

EDITORIALS

The need for persistent efforts in the fight against cancer

Although much progress has been made in the treatment of cancer during the past two or three decades, our five and 10 year survival rates are far from ideal and we must continue the struggle for improvement. Although the five year survivals following treatment of certain cancers are as high as 80 to 90 per cent, in others it is below 15 or 20 per cent. In carcinoma of the head of the pancreas the expected five year survival rate following pancreatoduodenectomy is even less than five per cent. In this instance the lesion is so invasive that perhaps even extremely early therapy would yield poor results. However, in most cancers there is good evidence that very early recognition and therapy would yield markedly better figures for five years survival following therapy. Unfortunately, from the anatomical standpoint, we have just about reached the limit on the extent of resections. Accordingly, we must concentrate on earlier diagnosis and earlier therapy.

Fortunately, external cancers can be detected early in their development. Therefore with proper education and average care, we should be able to obtain those cases early in their growth. On the other hand, many or in fact most of the internal cancers start out insidiously. There is little doubt but what many may present no symptoms whatever for weeks or even months after their origin. Nevertheless, if we go into the history of most patients with internal cancer we will find significant symptoms for many months before the patient sought medical aid. It seems reasonable to assume that if we could obtain these patients for treatment a week or two after onset of symptoms, we might improve results of treatment very much indeed. Since symptoms are present in the vast majority of patients with cancer long before they came to the physician it should therefore be possible to obtain better results by efficient lay education.

Since symptoms of cancer often are similar indeed to symptoms of trivial diseases, it will be impossible to educate the lay individual to the point where he will know exactly when, and when not, to seek medical advice. Often it is very difficult for the physician to differentiate between symptoms of malignant disease and those of harmless malady.

Accordingly, if we are going to make significant improvement in our treatment of cancer, we will have to examine many patients with seemingly insignificant symptoms. When and if a specific blood test for cancer becomes available it will not be necessary to resort to physical examination.

In an effort to obtain earlier diagnosis and therapy, the American Cancer Society, Illinois Division intends to distribute leaflets this spring to lay individuals, emphasizing the great advantage of early diagnosis and treatment. One of these is entitled "Fight Cancer With a Checkup and a Check." It will be distributed in April at a time coinciding with the annual campaign for funds for the American Cancer Society. The Committee on Cancer Control of the Illinois State Medical Society has reviewed this leaflet and heartily approves its distribution. It will probably induce an increased number of patients to seek examination for cancer. Before

distribution to the lay public a copy of this leaflet will be sent to Illinois physicians for their information and to indicate when requests for examination might be expected. We hope that Illinois physicians will be very co-operative in acceding to requests from patients for examinations, because this is actually the only way we have at present of obtaining earlier diagnosis and treatment.

W.H.C.

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Dr. Coggeshall named new aid to Folsom, welfare secretary

Dr. Lowell T. Coggeshall, member of the Illinois State Medical Society and University of Chicago biologist, is the new special assistant for medical and health affairs in the Department of Health, Education and Welfare.

Named by President Eisenhower, Dr. Coggeshall succeeds Dr. Chester S. Keefer, who resigned. Dr. Coggeshall is on leave of absence from the University of Chicago for a year to serve in his new federal position, which pays $15,000 annually.

Secretary Marion B. Folsom, in announcing the nomination which was subsequently confirmed by the Senate, said:

"Dr. Coggeshall is one of the nation's outstanding medical leaders. He has a distinguished record in medical research, teaching and administration. His skill and experience will be invaluable assets in the months ahead when important policy issues in the health field will be under consideration. I am delighted that he is joining the department."

The new assistant was born in Saratoga, Ind., 54 years ago and was educated at the University of Indiana. He was appointed dean of the University of Chicago's division of biological sciences in 1949.

The Chicago *Tribune* quoted Dr. Coggeshall as saying that in his appointment he will advocate the strengthening of the nation's medical research facilities, especially in the area of the basic sciences. He also will endeavor to find a solution to the mounting cost of medical care.

He emphasized that he is unalterably opposed to any kind of government control or domination over medicine and said that he is sure the programs he will seek to foster can be implemented without imperiling the spirit of free enterprise.

Social Security — big '56 issue

Every physician who is conscious of his duties as a citizen should now be taking an active interest in a timely issue which the American Medical Association considers of great importance — not only to the medical profession but to all of the American people.

That issue is HR 7225, a bill passed by the United States House of Representatives last summer near the end of the Congressional session. This bill, known as the Social Security Amendments of 1955, was first rushed through the House Ways and Means Committee without public hearings. Then it was passed in the House, by a vote of 372 to 31, under a suspension of the rules which barred amendments and limited debate to 40 minutes. The Senate Finance Committee, however, refused to take hasty action on a bill of such major importance. After hearing the many serious questions raised by Mrs. Hobby, then Secretary of the Department of Health, Education and Welfare, the Committee decided to hold extensive public hearings during the second session of the 84th Congress.

Just what is this legislation that appears to be so politically attractive to individuals with an eye on the 1956 elections? Why was the House majority leadership so determined to avoid open hearings and normal debate? Let's take a brief look at the main provisions of the bill.

This is the legislation which would lower the Social Security retirement age for women from 65 to 62; extend monthly benefits for permanently and totally disabled children beyond the age of 18; expand compulsory social security coverage to all self-employed professional groups except physicians, and raise social security taxes over and above the increases already scheduled for the next twenty years. Those provisions alone demand careful study of their effects on the philosophy, scope, and financial stability of our social security system.

The most controversial section of the bill, however, is the one which would make permanently and totally disabled persons eligible to receive their social security retirement benefits at age 50 instead of 65. It is this section which is of particular concern to the medical profession. It is of far greater concern than the question of voluntary or compulsory coverage of physicians under the social security system. That

is a separate issue which we are not discussing in this editorial. The plan for a national system of permanent and total disability benefits has far more serious implications for medicine and the nation.

It raises questions such as these: Is there any real need for a federal program? What are the facts on permanent and total disability? Won't this duplicate or overlap existing programs of assistance and rehabilitation? What effect will cash handouts have on a patient's incentive to be rehabilitated? Won't this extend federal control over physicians? How will this program affect the future of medical practice? Will it lead, step by step, to the lowering and eventual elimination of the age-50 eligibility requirement; then, cash benefits for the dependents of those who are permanently and totally disabled; then, a temporary disability benefits program; then, cash benefits or direct government payments for hospital or medical costs, and then, ultimately, a full-fledged system of government health insurance?

These are but a few of the many grave questions which already have been raised concerning this legislation. As physicians, we must be concerned over the medical aspects of the problem. As citizens, we also must be concerned over the trends and implications in the never ending expansion of our social security system. The minority report of the House Ways and Means Committee expressed it this way:

"We do not believe that our committee has discharged its obligation to either the Congress or the American people by its brief and closed door consideration of this vital legislation. We have sought to point out the grave social and economic implications of the bill. We have dwelt at some length with the staggering ultimate costs of this developing program, because we do not believe that either the Congress or the public has any conception of its magnitude."

Our social security system now has reached the point where any further changes may have a profound influence on the nation's economic, social, and political future. The time has come to face up to the question of just what social security should accomplish and just where it should stop. The American Medical Association strongly *urges* that the social security issue be taken out of the arena of vote catching politics; that there be an objective, thorough study of social security in all its present and future aspects, and that the facts and realities emerging from such a study be used as the basis for a sound national decision on this vital issue. It especially protests precipitate action on the complex question of disability without thorough investigation of alternative mechanisms.

In our opinion, that is a reasonable, responsible policy that deserves the moral and intellectual support of every physician.

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4,000 physicians to attend Chicago clinical conference

Nearly 4,000 physicians will participate in the 12th Annual Clinical Conference of the Chicago Medical Society in the Palmer House, February 28-March 2. The four-day gathering will spotlight Chicago's leadership as a medical education center.

Prominent physicians from many parts of the country, most of them serving in a teaching capacity, will present a scientific program which will include all of the most important diseases of man.

More than 35 papers will be presented. Among the subjects which will be covered are current trends in allergy, the newer agents in the treatment of high blood pressure, evaluation of the infertile couple, accidental poisoning in children, heart lesions needing surgery, current problems in diabetes, common diseases of the skin, and the diagnostic features of breast lesions.

There also will be papers on arthritis, adrenal diseases, hernia, eye injuries, gastrointestinal diseases, tuberculosis, jaundice, painful shoulder and many other subjects.

One panel will cover "What's New in Medicine and Surgery." Another will deal with "Gall bladder." There will be daily teaching demonstrations in many subjects.

Question and answer periods will be devoted to hematology, diabetes, urology, isotopes and foot disorders. Luncheons will be marked by round table discussions.

The Woman's Auxiliary of the Chicago Medical Society will provide entertainment for visiting ladies.

Dr. H. Kenneth Scatliff is chairman of the executive committee handling the conference.

There is no registration fee for members of the Chicago Medical Society. For others, there is a fee of $5. Advance registrations and requests

for a program should be addressed to the Chicago Medical Society, 86 East Randolph Street, Chicago (1). Hotel reservations should be sent to the reservation department, Palmer House, State and Monroe Streets, Chicago.

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Ralph P. Peairs, M.D. 1875-1955

Dr. Ralph P. Peairs, aged 80, died at his home in Normal, Illinois on December 18, 1955. He had apparently been in good health a few minutes before his death which was attributed to a heart attack. Dr. Peairs was born near Heyworth, Illinois, May 5, 1875. He attended Illinois State Normal University and was graduated from Rush Medical School in Chicago, 1903. He practiced in Milwaukee, Wisconsin until 1918 when he returned to Normal, Illinois.

He was appointed physician for the Illinois Soldiers' and Sailors' Children's School which position he held until 1933. His particular interest was in orthopedic surgery and during his period of service at the state institution, he was able to restore many crippled children to lives of usefulness. He conducted many crippled children's clinics over a period of many years, and for 17 years he was secretary of the McLean County Medical Society.

From 1937 until 1952, he was Councilor of the Illinois State Medical Society for the Fifth Councilor District. He was selected as the first president of the McLean County Board of Health, continuing in that capacity until his retirement. In 1913, he was married to Miss Myra Sinclair of Normal, who died in 1940. His second marriage was to Miss Nina Crigler, who survives. He has one son, Richard who lives in Columbus, Ohio, two daughters, Mrs. Fred A. Long, Whittier, California and Mrs. Louis E. Rames, of Palo Alto, California. He had four grandchildren.

Dr. Peairs will long be remembered by thousands of members of this State Medical Society who will join with the officers and Councilors of the Society in extending sympathy to the family of Dr. Peairs.

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Roseola infantum

The following are the main characteristics of roseola infantum: It occurs nearly exclusively in the first three years of life. There is an initial febrile stage with fairly high pyrexia and little to account for it. It lasts several days, most commonly three. Rather surprisingly (hence the name, exanthema subitum) when the temperature is settling or has settled down, and the child is getting well, a rash like rubella or very mild measles appears and the illness ends. Complications scarcely ever arise. No fatal case has been described. Roseola infantum practically always confers permanent immunity to it. The great majority of cases reported have been sporadic but there have been some contact cases and descriptions of small epidemics, mainly in homes for babies, have been published. *A. Letchner, M.D. Roseola Infantum: A Review of 50 Cases. Lancet, Dec. 3, 1955.*

John R. Wolff, Chairman, Walter C. Bornemeier, Edward W. Cannady, Roland R. Cross, Jr., E. F. Dietrich, W. W. Fullerton, Edwin F. Hirsch, Frederic T. Jung, W. R. Malony, Caesar Portes, William Requarth, Frederick W. Slobe.

Medical Ethics

WILLARD W. FULLERTON, M.D., SPARTA

A GREAT deal has been written and spoken about medical ethics in recent years. A code of ethics was handed down to us in the Oath of Hippocrates with which we were familiarized early in our medical training. The Hippocratic Oath is still the basis for our conduct, and medical ethics has not changed fundamentally throughout the centuries. This is due, probably, to the fact that ethics are much the same everywhere and at all times. Interpretations of the code are responsible for the controversial issues. The method of practice forces doctors to be more closely associated with each other in the care of patients and our code of ethics should be elaborated and defined more carefully and specifically.

In recent years, the chief discussions have been on the subject of fees, the question of fee splitting, and the various interpretations and the manner in which these are done. Much has been written, not only in medical circles but in lay publications about ghost surgery. Sometimes the comments have been most distasteful and not to the credit of the medical profession, particularly in the public press. In 1954 the Judicial Council of the American Medical Association handed down a statement of the recommended and accepted conduct of the medical profession in reference to the billing of the patient. This was well presented and outlined by Dr. Walter C. Bornemeier in the Medical Economics section of the October 1954 Illinois Medical Journal.

Quoting from Dr. Bornemeier's article:

"The Judicial Council is still of the opinion that when two or more physicians actually and in person render service to one patient they should render separate bills. There are cases, however, in which the patient may make a specific request to one of the physicians attending him that one bill be rendered for the entire services. Should this occur, *it is considered to be ethical if the physician from whom the bill is requested renders* AN ITEMIZED BILL SETTING FORTH THE SERVICES RENDERED BY EACH PHYSICIAN AND THE FEES CHARGED. THE AMOUNT OF THE FEES CHARGED SHOULD BE PAID DIRECTLY TO THE INDIVIDUAL PHYSICIAN WHO RENDERED THE SERVICE IN QUESTION."

"Under no circumstances shall it be considered ethical for the physicians to submit joint bills unless the services were actually rendered by unless the services were actaully rendered by the physician as set out in the bill." This final paragraph of the Judicial Council's report sums up the entire action. The statement in the preceding paragraph that "the fees charged should be paid directly to the individual physician" leaves no doubt of the intent of the Judicial Council and the House of Delegates in approving the report. A COMBINED, UNITEMIZED BILL COL-

LECTED BY ONE OF THE DOCTORS AND DIVIDED AS HE SEES FIT WITHOUT THE KNOWLEDGE OF THE PATIENT IS UNETHICAL. This practice along with "kickbacks, rebates, discounts, loans, favors, gifts and emoluments with or without the knowledge of the patient" should be promptly discontinued.

The past months have brought various resolutions for the consideration of the American Medical Association: the dispensing of drugs by physicians, doctor ownership of drug stores, and the dispensing of eye glasses by ophthalmologists. The controversies on these subjects were corrected during the June 1955 meeting of the House of Delegates of the American Medical Association.

The recommendation of this reference committee was based on Section 8, Chapter I of the Principles of Medical Ethics which reads:

'OWNERSHIP OF DRUGSTORES AND DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

'Sec 8.—It is unethical for a physician to participate in the ownership of a drugstore in his medical practice area unless adequate drugstore facilities are otherwise unavailable. This inadequacy must be confirmed by his component medical society. The same principle applies to physicians who dispense drugs or appliances. In both instances, the practice is unethical if secrecy and coercion are employed or if financial interest is placed above the quality of medical care. On the other hand, sometimes it may be advisable and even necessary for physicians to provide certain appliances or remedies without profit which patients can not procure from other sources.'

The Committee recommended the following in lieu thereof:

'DISPENSING OF DRUGS AND APPLIANCES BY PHYSICIANS

'Sec. 8—It is not unethical for a physician to prescribe or supply drugs, remedies, or appliances as long as there is no exploitation of the patient.'

These statements affirm that the use or supply of these articles is not to be a source of increased income to the doctor or at least not a means by which the doctor can extort more money from the patient. The subject of doctor ownership of drugstores of course stands as a controversial issue.

The foregoing paragraphs of this article have been confined primarily to controversial issues which have had some decisions handed down. Some of these are pretty well settled and at least have been stated definitely enough to be a guide to our ethical conduct in respect to professional demeanor towards the patient and the public. However, the purpose of this article is not primarily concerned with this phase of medical ethics.

The function of medical organizations is to bind ourselves together so that we not only improve ourselves educationally and scientifically, but also that we may render better service to our patients. The ultimate purpose of medical organization, therefore, is to render better service and better medical care and thereby to be of greater value to the public. Another phase in medical organization is to exchange ideas among ourselves, to improve relationships among ourselves and to bind ourselves together to protect our own interests. Furthermore, a function of medical organizations is to promote better fellowship among physicians. The purpose of this article is to bring out a few points of our responsibility to each other as far as medical ethics are concerned. It does not improve our prestige as a group of physicians, or as an individual physician, when we allow ourselves to discredit another physician in public or in private conference with a patient. It behooves us at all times to be careful of our attitudes when we are observing another doctor's patient or another doctor's prior patient. It is easy for us, when we are busy, to see a patient, whom some other doctor has observed and treated, see results not being secured which probably should be secured, and hurriedly take over. Thus, even without words, we discredit the prior treatment. A disapproving expression can easily start a law suit. Doctor shopping is the mode in these days of specialization because patients do not know where to go. They shop from one doctor to another, sometimes from one specialist to another, and doctors are beginning to get the idea that while the patient is in his office he is my patient, and when he leaves my office he is just a patient. It is high time we cultivated a personal fellowship with our patients.

(*Continued on page* 105)

THE P. R. PAGE

Sage advice on PR

Sage advice on public relations was given by Dr. Walter L. Portteus, retiring president of the Indiana State Medical Association at the last annual meeting of that group. In presenting a positive program, he said:

"Medicine has long been on the defensive and is often accused of being opposed to so-called progressive ideas. Part of this stems from the lack of imagination and planning and part from the complacency of all of us as individuals. Therefore, join all lay health organizations in a co-operative spirit and help guide their working principles to the betterment of all.

"Be citizens first and doctors second and you will be interested in more than the scientific practice of medicine. Be patient with and helpful to your legislators as they, too, are being subjected to terrific pressures beyond their control. To know your congressman better, I would urge that the annual trip to Washington be maintained so that your own congressmen will be aware of our thinking.

"As individuals remember your obligation to voluntary insurance programs; do not abuse or overuse its potentials. Learn to work with and understand its basic philosophy.

"Meet with representatives of all professions, labor, legal, farm, and veterans' organizations. You will be astounded when you see both sides of the questions involved. As an example, medicine and law should smooth out areas of misunderstanding concerning medical expert witnesses, workmen's compensation cases, and other relationships which should obviate delays for all concerned.

"Be willing to discuss fees on a prior basis and give advice as to insurance coverage when necessary. As you know, so-called overcharging is a fertile field for malpractice suits. A patient can comprehend medical costs and is likely to be disgruntled unless he has received an explanation beforehand. We as doctors are the only ones who are trained to judge the necessity and skills employed in treatment.

"Hence, we as physicians must exert our influence over the small percentage of our colleagues who give us a bad reputation, to the end that they will be conscious of their obligations as men of medicine. This to be done efficiently and quietly so that we do not hang our dirty linen on the line for public view."

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AMA's PR program for 1956

The AMA Public Relations Department has announced its PR program for 1956. It will cover:

(1) Production of a new 28-minute television film for the public, highlighting some phase of medicine's positive story of public service.

(2) Production of a 16 mm. motion picture film to answer physicians' questions about the AMA and to acquaint members with the services offered.

(3) Encouragement of medical societies in the sponsorship of or participation co-operatively

with civic groups in high school science fairs.

(4) Release of the results of a nationwide survey conducted in 1954 and 1955 on "What Americans Think of the Medical Profession." Medical societies will be asked to help bring this information to the attention of the profession and public.

(5) Publication of three additional pamphlets for distribution at county and state fairs.

(6) Co-sponsorship with Association of American Medical Colleges, American Medical Education Foundation, the National Fund for Medical Education, and the Woman's Auxiliary to the AMA in a nationwide Medical Education Week, April 22-28; state and county societies will be asked to promote the program locally.

(7) Closer liaison with the press with the assistance of state and county medical society executives.

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New AMA PR aids

The American Medical Association has announced several new aids for PR programs of county medical societies.

Its Bureau of Health Education will put out three new radio transcription series of 13 programs each for use by county societies over local stations. These will be livened by music.

The first will feature a "music with your meals" theme. Dr. W. W. Bauer, bureau director, will give a medical commentary based on 13 phases of diet and nutrition. An instrumental trio will render folk songs, ballads, and semi-classics.

The second series, entitled "Summer Serenade," will deal with summer situations, such as having fun while avoiding illness and accidents. The format and subject of the third are to be chosen. Probable releases will be April 1, August 1, and November 1.

Two booklets of vital interest to medical societies have just been published and may be obtained from the AMA Council on Medical Service. One is "Guides for Medical Society Grievance Committees," which reviews findings and recommendations of a special committee appointed by the AMA Board of Trustees. The other is "Report of the Survey on County Medical Society Activities," which covers data on society meetings, budgets, educational and scientific programs, personnel, building facilities, work of committees, and public relations activities.

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Promote emergency service

As a result of the activities of the Public Relations Committee of the Adams County Medical Society, the telephone directory of Quincy now carries an advertisement relative to telephoning a physician in an emergency.

The advertisement appears under the heading "Physicians and Surgeons Information Exchanges" and immediately before the telephone listing of "Physicians and Surgeons (M.D.)" of Quincy. It reads:

> IN AN EMERGENCY
>
> DIAL BA-5088
>
> Adams County Medical Society
> Physicians' Exchange
> If Unable to Locate Your
> Physician (M.D.)
>
> A private physician will be contacted
> if your physician cannot be located

The cost is borne by the Adams County Medical Society from the budget allotted to its Public Relations Committee.

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CORRESPONDENCE

A.M.A. conference on rural health

The 11th National Conference on Rural Health will be held at the Multnomah Hotel, Portland, Oregon, March 8-10, 1956. In accordance with the practice in former years, an informal pre-conference session for members of the medical profession will be held March 8, beginning at 9:00 a.m.

A cordial invitation is extended to members of the medical profession to attend and participate in this important session, which will be devoted to a frank and full discussion of some of their problems.

Physicians desiring to attend this conference should write to the Multnomah Hotel to assure proper accommodations. The completed program may be procured by writing to Mrs. Arline Hibbard, Secretary, Council on Rural Health, 535 North Dearborn Street, Chicago 10, Illinois.

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Public health scholarships

Harvard University School of Public Health announces that scholarships for the academic year 1956-57 will be granted to individuals of high professional promise in awards ranging from part tuition to tuition plus a stipend, according to the qualifications and financial needs of the applicants. The scholarship funds are limited and are primarily intended for citizens of the United States. In general, preference will be given to applicants under 35 years of age.

Scholarships are available to those in the following categories who wish to obtain post-graduate education in the field of public health or in one of the basic sciences related to public health: physicians, dentists, and veterinarians; industrial physicians; public health nurses with a college degree and satisfactory field experience; social workers with a master's degree from an approved school of social work and acceptable experience in the field of medical or psychiatric social work; health educators with a college degree, training either in health education or in the natural and social sciences and experience in general education or community health work; dietitians with a college degree and satisfactory field experience; college graduates who have concentrated in one of the natural sciences or in engineering (environmental aspects), including biologists, biochemists, nutritionists, microbiologists, parasitologists, or biostatisticians.

Scholarship applicants must be eligible for admission to the School as candidates for one of the following degrees: Master of Public Health, Doctor of Public Health, Master of Science in Hygiene, Doctor of Science in Hygiene, or Master of Industrial Health.

A catalogue of the School, Admission and Scholarship applications and further information may be obtained by writing the Secretary, Harvard School of Public Health, 55 Shattuck Street, Boston 15, Massachusetts.

Scholarship applicants must return completed admission and scholarship applications to the Harvard School of Public Health by March 1, 1956. Scholarship awards will be announced May 1, 1956. Under exceptional circumstances awards will be made at other times.

Clinics for crippled children listed for March

Twenty five clinics for Illinois' physically handicapped children have been scheduled for March by the University of Illinois Division of Services for Crippled Children. The Division will count 19 general clinics providing diagnostic orthopedic, pediatric, speech and hearing examination along with medical social and nursing service. There will be 3 special clinics for children with cardiac conditions, 1 for children with rheumatic fever and 2 for cerebral palsied children.

Clinics are held by the Division in cooperation with local medical and health organizations, both public and private. Clinicians are selected among private physicians who are certified Board members. Any private physician may refer to or bring to a convenient clinic any child or children for whom he may want examination or may want to receive consultative services.

The March clinics are:

March 6—Alton, Alton Memorial Hospital
March 7—Centralia, Recreation Center
March 7—Hinsdale, Hinsdale Sanitarium
March 7—Rock Island Cerebral Palsy, Foss Home, 3808 - 8th Avenue
March 8—Elmhurst Cardiac, Memorial Hospital of DuPage County
March 8—Springfield, St. John's Hospital
March 8—Sterling, Field House
March 9—Chicago Heights Cardiac, St. James Hospital
March 13—E. St. Louis, St. Mary's Hospital
March 13—Peoria, Children's Hospital
March 14—Joliet, Will County T.B. Sanitarium
March 14—Jacksonville, Passavant Hospital
March 15—Sparta, Sparta Community Consolidated School
March 16—Evanston, St. Francis Hospital
March 20—Shelbyville, Methodist Church
March 21—Evergreen Park, Little Company of Mary Hospital
March 21—Springfield (Cerebral Palsy), Memorial Hospital
March 21—Metropolis, Presbyterian Parish House
March 22—Bloomington, St. Joseph's Hospital
March 22—Rockford, St. Anthony's Hospital
March 23—Chicago Heights Cardiac, St. James Hospital
March 27—Effingham (Rheumatic Fever), St. Anthony's Hospital
March 27—E. St. Louis, Christian Welfare
March 27—Peoria, Children's Hospital
March 28—Aurora, Copley Memorial Hospital

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"Clinical reviews"

A 3 day program entitled "Clinical Reviews" will be presented April 9, 10, and 11, 1956, at Rochester, Minnesota. The presentations will be given by staff members of the Mayo Clinic and the Mayo Foundation for Medical Education and Research. The meeting will be devoted to lectures and discussions on problems of current interest in general medicine and surgery.

The number of physicians who can be accommodated is necessarily limited. Those wishing to attend should communicate with Mr. R. C. Roesler, Mayo Clinic, Rochester, Minnesota. There are no fees of any kind.

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Graduate instruction course in allergy

The American College of Allergists will conduct a Graduate Instructional Course at the 12th Annual Meeting of that organization.

Place: Hotel New Yorker, New York City.

Time: April 15, 16, 17, 1956 — Graduate Instructional Course April 18, 19, 20, 1956.

For additional information, write to:

Fred W. Wittich, M.D.
Secretary-Treasurer
401 Marquette Bank Bldg.
Minneapolis 2, Minn.

FWW: iw

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MEDICAL ETHICS (Continued)

one of us pledge, regardless of our station in the medical picture (specialist, general practitioner, educator, professor) to accept the responsibility of treating every physician with the respect that is due all physicians unless he proves to the medical society that he does not deserve it. This is the Old Code of Ethics for the Medical Profession and even today it is—*fundamental.*

AT THE EDITOR'S DESK

Editors of medical journals receive the same news releases on medical topics that are sent to the editors of newspapers, magazines, radio, and TV. Some of this material is relegated to the wastebasket; some is worthy of comment. From time to time your editors will mention a few of these items in the Journal. This does not constitute an endorsement of the products or procedures, and it is well to remember that the originals were prepared for lay consumption.

Abbott Laboratories and the Upressit Products Corp. have developed a new spring steel safety bottle cap to prevent children from opening an aspirin bottle. The cap is no problem for the adult but requires more strength, co-ordination, and comprehension that a child is capable of. It is hoped that this device will increase the safety of the medicine chest. Ignorant misuse of drugs is responsible for two per cent of accidental deaths in children under 5; and poisoning from accidental ingestion of medications represents up to one per cent of the total.

The Beltone Hearing Aid Co. has presented $7,000 to Northwestern University Medical School for a new soundproof hearing laboratory, to be used in making hearing tests. One of the first major projects will be a study to determine whether a hearing aid for both ears will be of more help to the hard of hearing than the usual one ear device. The idea is to overcome the intolerable confusion of crowd noises that bothers many wearers of hearing aids.

A Professor of Social Welfare from the Florida State University, reported on a new study of people's feelings toward physicians and hospitals. The main criticism was that physicians and hospital personnel lacked the human warmth of the oldtime general practitioner; they give the impression of "not caring deeply about the human patient." Of the group interviewed, 19 per cent thought physicians charged too much; 82 per cent believed hospital costs are high; and 71 per cent said hospital care is unsatisfactory. One-half criticized the unwillingness of physicians to make house calls. The old family doctor never will be forgotten. The Professor conducting the questionnaire failed to ask the persons interviewed whether they would like to set back the clock and receive the horse and buggy remedies dispensed by oldtimers.

A new germicide, chlorpactin WCS-90, a derivative of chlorine, caused dramatic improvement in 48 victims of chronic interstitial cystitis. According to the news release the majority of these patients had not responded to other medications but "spectacular improvement was achieved" with chlorpactin.

Cetadiol, a new steroid compound, was used in the treatment of 43 advanced alcoholics. The news release says the product put them on the road to full recovery in an amazingly short time. Apparently the drug affects the brain; it exerts a sedative effect upon the nervous system so that it is unnecessary to use barbituates or sedatives.

The tobacco cancer scare was followed by a drop in the total consumption of cigarets in 1954. But the industry staged a partial recovery in 1955 when smokers switched from regular to the filter type. King size smokes held their own.

NEWS of the STATE

ADAMS

Medical Secretaries and Assistants.—The Swanberg Medical Foundation was the original sponsor of what is now known as the Adams County Medical Secretaries and Assistants Club. When the club was organized in 1951 this Foundation contributed $1.00 for each of the club's charter members. Later it gave each club member a copy of "Letters to a Doctor's Secretary" ($2.00 per copy), published by Medical Economics. In November the Adams County Medical Society paid out of its Public Relations Budget the expense to send two members of the Adams County Medical Secretaries and Assistants Club to the national convention of medical secretaries held in Kansas City, Missouri. The Society and its Foundation are greatly interested in the medical secretaries' organization and wish to commend it on its regular meetings. The latest activity of the Adams County Club is to sponsor the formation of an Illinois State Club to be affiliated with the new national organization which is being organized.

COOK

Alcohol and Emotional Problems to be Studied With New Grant.—The department of neurology and psychiatry of Northwestern University Medical School has received a grant of $26,000 from the Illinois state department of welfare to study the effect of alcohol on the ability of a person to cope with emotional problems. This study will be the initial step in a broad research program on narcotic addiction and will be carried on under the direction of Drs. G. K. Yacorzynski, professor of neurology and psychiatry and Harvey Nash, Associate.

How persons handle complex psychological problems will be tested, first, in those given moderate amounts of alcohol and, second, in those given only grape juice and peppermint oil, which tastes the same. Over 900 total hours of testing are planned.

Tests will be given on the capacities of subjects to comprehend their environment in all its complexity, to bring relevant aspects of their past experience to bear in dealing with current problems, to pursue their goals in face of external or internal distraction, to decide wisely between alternate courses of action and to cope with strong emotions by putting them to constructive use.

Fund for Patients Needing Transfusions.—A fund has been established by Mr. and Mrs. Sam Sherman of Chicago to aid patients having diseases of the blood and blood forming organs, who require blood transfusions or certain special therapeutic agents. The fund, administered by the Hematology Research Foundation, is in memory of Stanley Sherman, a victim of leukemia. Applications for funds for blood transfusions may be discussed with Dr. Raphael Isaacs, 104 South Michigan Avenue, Chicago, Illinois.

First James B. Herrick Memorial Lecture.—Dr. George E. Burch, chairman of the department of medicine of Tulane University School of Medicine, New Orleans, presented the first James B. Herrick Memorial Lecture under the auspices of the Chicago Heart Association, January 24, 1956. Title of the lecture was "Clinical Management of Congestive Heart Failure Including Certain Aspects of Its Relationship to Venous Tone."

Personal.—Dr. Joseph H. Chivers, medical director of the Crane Company since 1936, has been elected medical director of the Rehabilitation Institute of Chicago, a non-profit institution concerned with the physical restoration of disabled persons. Dr. Chivers, who will serve as the chief medical officer of the institute, has resigned as volunteer head of the Medical Advisory Committee of the institute to take on his new activities.—John G. Searle, Chicago Medical Research and Pharmaceutical Manufacturing executive, was given a fellowship in the Institute of Medicine of Chicago, December 6, 1955, in recognition of his long time work in behalf of education of the public in fields related to medicine. The fellowship was conferred by Dr. Arthur R. Caldwell at the Institute's fortieth an-

nual dinner.—Dr. Maurice W. Sbertoli, Evanston, has been elected president of the medical staff at St. Francis hospital, Evanston. He succeeds Dr. George H. Irwin, also of Evanston.—Dr. Walter H. Theobald has been re-elected to his tenth consecutive term as president of the Medical Center Commission.—Dr. Herbert E. Schmitz was re-elected treasurer of the American Academy of Obstetrics and Gynecology at a recent meeting in the Conrad Hilton Hotel.

Hospital News.—Evanston hospital has received a $25,000 contribution for a new maternity clinic from the family of Henry Crown, chairman of Meterial Service Corporation, which includes Dr. Edward A. Crown, an obstetrician and a member of the staff.—Shriners Hospital for Crippled Children recently received a $50,000 check which represented the proceeds of the annual Shrine circus held last spring.

Blatt Memorial Lecture.—The seventh annual Maurice Lamm Blatt Memorial Fund Lecture was given October 24, under the auspices of the Pediatric staff of the Cook County Hospital. Wolf W. Zuelzer, director of laboratories of the Children's Hospital of Michigan, gave the lecture on "Maternal Fetal Incompatibility in the O-A-B-System and Hemolytic Disease of the Newborn."

Northwestern Instructor Wins Trip to Hawaii.—Dr. Sherman S. Coleman, Northbrook, winner of an all-expense to Hawaii for submitting the best paper on bone irregularities in a contest sponsored by the Western Orthopaedic Association, delivered the award-winning paper in Honolulu, November 8, at an assembly of the association. Dr. Coleman, an instructor in orthopedic surgery at Northwestern University Medical School, had as his subject the diagnosis of congenital dysplasia of the hip in the newborn infant in which the hip bone develops abnormally before birth.

Society News.—Dr. Leon Feldman, associate professor of medicine, University of Illinois College of Medicine, discussed "Diagnosis of Rheumatic Heart Disease" at a special meeting in Provident Hospital in cooperation with the Chicago Heart Association. The lecture was held in the auditorium at Provident Hospital, January 11.

New Society.—The Central Society of Nuclear Medicine was recently organized as a regional group to encourage and promote interest, work and investigation in the field of Nuclear Medicine. Membership is open to physicians and other professional workers in the field. Present plans are to have three meetings each year. Officers of the society are: Irvin F. Hummon, M.D., president; Donalee Tabern, Ph.D., vice-president; Ervin Kaplan, M.D., treasurer and Robert S. Landauer, Ph.D., secretary.

DUPAGE

Society News.—Dr. Oglesby Paul, associate clinical professor of medicine, University of Illinois College of Medicine, discussed "Rheumatic Carditis" at a meeting of the Dupage County Medical Society, January 18. The lecture was under the sponsorship of the Chicago Heart Association.

KANKAKEE

New Officers.—Dr. Herbert P. Schwartz, Kankakee, was installed as president of the Kankakee County Medical Society at a recent meeting. Dr. Henry A. Hartman, Kankakee, was chosen president-elect, and Dr. Sheldon W. Reagan, Aroma Park, was re-elected secretary. Dr. Charles Allison, Kankakee, was named delegate to the Illinois State Medical Society, and Dr. Donald A. Meier, St. Anne, was named alternate delegate.

KNOX

Society Election.—Dr. G. K. Smart, Galesburg, was elected president of the Knox County Medical Society, November 17, 1955. Dr. Milo Reed, Galesburg, was chosen vice-president and Dr. Fred Stansbury, was re-elected secretary-treasurer. Dr. Merrill Beecher was named delegate to the Illinois State Medical Society. The speaker for the evening, Dr. William R. Best, assistant professor of medicine, University of Illinois College of Medicine, gave an excellent presentation on "Blood Disorders."

Society Guest of State Hospital.—The Knox County Medical Society were guests of the Galesburg Research Hospital at a meeting in December. Dr. Harold Himwick spoke on "Uses of Thorazine and Reserpine in Mental Cases" and Dr. Henry Venclauskas conducted a clinical pathological conference. Dr. Lester Rudy, the hospital superintendent, acted as host and moderator during the evening session. The Committee on Poliomyelitis of the Knox County Medical Society gave some excess vaccine to the Lillian Taylor School where innoculations were carried out recently. The vaccine had been left over from the school program in the fall.

LAKE

New Officers.—At the December 13 meeting of the Lake County Medical Society, the following officers were elected; Drs. John Milroy, president, Lawrence Qualman, vice-president; M. J. McAndrew, secretary; Gerald Dean, treasurer; Kenneth Morris, Board of Censors three year term; Asa Myers, Victory Memorial Hospital Board; Douglas Boyd, Grievance Committee one year term; William Ewals and Robert Robbins, Grievance Committee three year term; George Callahan, delegate and William Darnall, alternate. At this meeting, the transfer of Dr. Hugh Bernardi from the Lake County Medical Society, Indiana, to the Lake County Medical Society, Illinois, was approved.

ST. CLAIR

Society News.—Dr. John Deyton, medical director of Miriam Rehabilitation Division, Jewish Hospital, St. Louis, discussed "The Role of the Physiatrist as a Consultant in the Management of Rehabilitation

Problems" before the St. Clair County Medical Society at the Trailway Restaurant, January 5.

SANGAMON

Society Election.—Dr. Emmet F. Pearson was chosen president of the Sangamon County Medical Society for the coming year. Dr. A. E. Steer was named vice-president and William DeHollander, secretary. Delegates to the Illinois State Medical Society are Drs. Kenneth Schnepp and Darrell H. Trumpe. Their alternates are Drs. Thomas F. Harmon and J. Marvin Salzman. Physicians making up the board of directors for the society are Dr. Pearson, chairman; Dr. DeHollander, secretary; Franz K. Fleischli, Thomas F. Harmon, Paul LaFata, David J. Lewis, J. Keller Mack and Jacob E. Reisch.

Medical-Community Teamwork.—A panel discussion on Medical-Community Teamwork was the feature of the Sangamon County Medical Society at the Elks Club, January 5. Making up the panel were Nelson Howarth, Mayor; Carl Carter, president of the Association of Commerce and Industry; George Blanchard, president of the United Community Services, and Walter Oblinger, associate counsel of the Illinois State Medical Society. A highlight of this meeting was the Annual Memorial Service to deceased members of the society, conducted by Rabbi Lewis Satlow.

VERMILION

Society News.—Dr. Harold C. Lueth, Evanston, member of the Federal Board of Civilian Defense, addressed the Vermilion County Medical Society at the Hotel Wolford, Danville, January 3, on "Danville's Role in Civilian Defense."

Special Society Election.—Dr. M. S. Parker was elected president of the Vermilion County Medical Society at the December 6 meeting. Other officers chosen are Drs. E. F. Dietrich, vice-president, and L. W. Tanner, secretary-treasurer. Dr. J. E. Urbas was named alternate delegate and Dr. J. W. Moore, delegate to the Illinois State Medical Society. Dr. Harlan English, Danville, is councillor for the Eighth District.

WABASH

Three Physicians Honored.—Fifty year emblems were presented to Drs. J. J. McIntosh, Mt. Carmel; C. F. Brian, Bellmont, and C. E. Gilliatt, Allendale, December 8, 1955. The fifty year awards are emblematic of membership in the Fifty Year Club of the Illinois State Medical Society. The physicians, who have completed fifty years or more in the practice of medicine, are still active. Dr. Burtis Montgomery, councilor for the Ninth District, made the presentation and Dr. Edmund F. Foley, Chicago, spoke. Among the physicians honoring the three doctors of medicine was Dr. Andy Hall, Mount Vernon, who, a few years ago, was chosen the outstanding general practitioner of the year by the American Medical Association.

GENERAL

CIO Health Center.—The Sidney Hillman Health Center, the nation's fourth health center to provide medical care for CIO unionists in the clothing industry was recently dedicated by the CIO Amalgamated Clothing Workers of America. It occupies two floors of the Amalgamated center at 333 S. Ashland Ave. Its staff, headed by Dr. William S. Hoffman, professorial lecturer in medicine at the University of Illinois College of Medicine, will include thirty specialists and a staff of technicians.

Expectation of Life at Birth.—In Illinois the expectation of life at birth at the midcentury was 66.0 years for white males and 71.6 years for white females, according to a recent release from the Metropolitan Life Insurance Company. For the United States population as a whole, as reported by the National Office of Vital Statistics, a part of the Public Health Service, the comparable figures are 66.3 years for males and 72 years for females. The release stated that the midcentury figures for Illinois mark a gain of 3.1 years for males and 4.1 years for females over those for 1940.

"Your Doctor Speaks" on FM Station WFJL.—The following physicians have recently appeared in transcribed broadcasts of FM Station WFJL, Thursday evenings at 7:45 p.m. The series, entitled "Your Doctor Speaks," is presented by the **Educational Committee** of the **Illinois State Medical Society:**

Joseph E. Alfano, instructor in ophthalmology, Northwestern University Medical School, December 22, on Cataract.

Frederick W. Preston, assistant professor of surgery, Northwestern University Medical School, December 29, on Progress in the Treatment of Cancer.

Harry B. Harding, professor of bacteriology, Northwestern University Medical School, January 5, on Microbes and Viruses.

R. Charles Oldfield, Jr., clinical assistant in surgery, Northwestern University Medical School, January 12, on Cancer of the Lung.

Lectures Arranged Through the Educational Committee of the Illinois State Medical Society:

Donald H. Atlas, associate professor of medicine, Chicago Medical School, St. Phillip Partners' Club, February 5, on Know Your Heart.

John B. Hall, director, Cook County department of public health, Solomon School PTA, March 13, on Polio and the Salk Vaccine.

Harold H. Dubner, psychiatrist in charge at Parkway Sanitarium, Woman's Auxiliary to the Southern Cook County Branch of the Chicago Medical Society, March 27, on Mental Health.

Lectures Arranged Through the Scientific Service Committee of the Illinois State Medical Society:

Armand J. Mauzey, clinical assistant professor of obstetrics and gynecology, University of Illinois College of Medicine, LaSalle County Medical Society at the Kaskaskia Hotel, LaSalle, January 12, on Office Gynecology.

William R. Requarth, assistant professor in surgery at the University of Illinois College of Medicine, Knox County Medical Society at the Galesburg Club, Galesburg, January 19, on Hand Injuries.

Peter J. Talso, associate professor and assistant chairman of the department of medicine, Stritch School of Medicine of Loyola University, Calumet Branch of the Chicago Medical Society, January 27, on Cardiovascular Aspects of Aging.

J. Henry Heinen, Jr., graduate of the University of Chicago School of Medicine, Knox County Medical Society at the Galesburg Club, Galesburg, February 16, on Common Orthopedic Problems.

William R. Best, assistant professor of medicine, University of Illinois College of Medicine, Lee and Whiteside County Medical Societies at the Plum Hollow Country Club, Dixon, March 15, on New Developments in Diagnosis and Treatment of Blood Dyscrasias.

Benjamin Boshes, professor and chairman of the department of neurology and psychiatry, at Northwestern University Medical School, DeKalb County Medical Society at the Bishop McLaren Foundation, Sycamore, March 27, on Psychosomatic Aspects of Medicine.

DEATHS

Marion K. Bowles*, retired, Joliet, who graduated at Northwestern University Woman's Medical School in 1894, died December 30, aged 90. She was a former president of the Will-Grundy County Medical Society.

John Edmond Bryant*, Evanston, who graduated at Howard University College of Medicine, Washington, D. C., in 1937, died December 13, aged 54.

Carroll Eugene Cook*, retired, Oak Park, who graduated at Rush Medical College in 1897, died December 19, aged 80. He was chief consultant and head of the radiological department of the Municipal Tuberculosis Sanitarium from 1923 to 1945.

William Warren Fox*, Lincoln, who graduated at the University of Illinois College of Medicine in 1932, died November 16, aged 48, of hemorrhage from duodenal ulcer. He was a past president of the Logan County Medical Society and medical superintendent of the Lincoln State School and Colony.

Jack L. Greider*, Decatur, who graduated at Marquette University School of Medicine, Milwaukee, in 1945, died in December, aged 35.

Robert H. Hayes*, Lake Villa, formerly of Chicago, who graduated at the University of Pennsylvania School of Medicine in 1906, died December 10, aged 76. He was a member of the staffs of the Illinois Masonic and American Hospitals, and a former president of the Chicago Medical Society.

Harry Winfield Kinne*, West Chicago, who graduated at the Chicago College of Medicine and Surgery in 1908, died in the Sherman Hospital, Elgin, November 3, aged 68, of coronary thrombosis and diabetes mellitus. He was a member of the staffs of the Community Hospitals in Geneva and Delnor Hospital in St. Charles.

Gottfried Koehler*, retired, Bonita Springs, Florida, formerly of Chicago, who graduated at Northwestern University Medical School in 1902, died December 18, aged 77. He served as assistant health commissioner of Chicago for many years; from 1932 to 1946, he was a school physician in Springfield.

Warren Gordon McPherson*, Bement, who graduated at the College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, in 1901, died November 15, aged 80, of myocarditis and arteriosclerosis. He was a member of the staffs of the Decatur and Macon County Hospital in Decatur, and the Kirby Hospital in Monticello.

Jacob Meyer*, Chicago, who graduated at Rush Medical College in 1916, died January 12, aged 61. He was senior attending physician at Michael Reese Hospital and a former president of the staff.

Benjamin S. Milton*, Chicago, who graduated at Wisconsin College of Physicians and Surgeons in 1898, died December 22, aged 85. He was a member of the staff of St. Elizabeth's Hospital for 25 years.

David Monash*, Chicago, retired, who graduated at Columbia University College of Physicians and Surgeons, New York City, in 1893, died November 5, aged 84. He was a member of the staff of Mercy Hospital.

Vincent V. Mullen*, Havana, who graduated at the Chicago Medical School in 1935, died recently, aged 55.

Ralph P. Peairs*, retired, Normal, who graduated at Rush Medical College in 1903, died December 19, aged 80. He was a member of the Council of the Illinois State Medical Society for many years.

Jacob Stern*, Chicago, who graduated at the University of Illinois College of Medicine in 1916, died December 20, aged 61. He was a member of the staff of the South Chicago Community Hospital for 35 years.

*Indicates member of the Illinois State Medical Society